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T H E  
W O R K S

O F

*John Fothergill*, M. D.

MEMBER OF THE ROYAL COLLEGE OF PHYSICIANS,  
AND FELLOW OF THE ROYAL SOCIETY,  
OF LONDON;

AND OF THE ROYAL COLLEGE OF PHYSICIANS  
IN EDINBURGH;

AND CORRESPONDING MEMBER OF THE ROYAL  
MEDICAL SOCIETY OF PARIS.

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By JOHN COAKLEY LETTSOM.

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Ἰητροὺς γὰρ ἀνὴρ πολλῶν ἀντάξιός ἄλλων.

HOM. Iliad, xj. 514.

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V O L. I.

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L O N D O N:

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CUI SUAS ARTES, SUA DONA LÆTUS

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## P R E F A C E.

**I**T is by no means requisite to apprise the Public of the importance of the following Essays: the general estimation of the writings of the late Dr. FOTHERGILL, is such, as to preclude any apology for giving a complete edition of them; and the detached manner in which they have been published in different works, while it augments the difficulty of collecting them together, will doubtless render such a collection more acceptable to the Public.

The Essays are not arranged exactly in the order of time, in which they were originally written; as they were dispersed in various works, the Editor was more solicitous of extracting them from each publication collectively, than of preserving chronological order, as they admit in some respects of distinct divisions: thus, after the Inaugural Thesis, the Meteorological Pieces from the Gentleman's Magazine are introduced;

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these are succeeded by others from the Philosophical Transactions, chiefly comprizing Natural History; the Practical Essays from the Medical Observations and Enquiries, follow next; and afterwards the Biographical and Miscellaneous Dissertations: and it happens at the same time, that this arrangement does not materially interrupt the chronological order, and where it does, it may be restored at pleasure, by referring to the title of each article, in which is specified the time of its publication. But to remove any inconvenience or objection from the circumstance alluded to, the work will be concluded with a complete chronological table of contents, including the posthumous essays, which, with those addressed to the Editor, constitute a considerable part of the present collection.

By the partiality indeed of correspondents, much more has been communicated to him than he has ventured to publish. Few men wrote more than Dr. FOTHERGILL has done, or more usefully; and were all his letters and manuscript essays, of which the Editor could enumerate upwards of one hundred in his own possession,



## P R E F A C E. ▼

feſſion, laid before the public, perhaps the importance of the Doctor's life, and the utility and magnitude of his employments, would appear ſuch, as might even elevate his character, and give it additional luſtre. But fearful left the partiality, which the veneration of an individual entertained for his character, might bias his judgment, and excite an over officiouſneſs in communicating to the public, what that public might not place in the ſame favourable point of view; he has been induced to do violence to his own feelings, rather than ſubject himſelf to the cenſure of doing any thing that could poſſibly tarniſh the character of a man, who paſſed through life with unſullied reputation, and died in the zenith of glory.

Whiſt the Editor thus avows his diffidence, and the cauſe of that diffidence, they, whoſe ſentiments of poſthumous character coincide with his own, will be the laſt to cenſure him for this conſideration: he is, however, gratefully prompted to acknowledge the important communications, and the kind aſſiſtance of many reſpectable individuals; and particularly, of David Barclay, of Youngsbury; Dr. Cum-  
ing,

ing, of Dorchester; Joseph Cockfield, of Upton in Effex; Thomas Collinson, of Southgate; Dr. Dobson, and Dr. Falconer, of Bath; Dr. Anthony Fothergill, of London; John Nichols, Printer of the Society of Antiquaries; John Payne, Accountant General of the Bank of England; Thomas Pennant, Esq; the British Linnaeus; Dr. Percival, of Manchester; Henry Smeathman, Author of the History of the Termites; Dr. Whitehead, of London, particularly for his Assistance through the whole edition; Dr. Zouch, an eminent Clergyman and Justice of the Peace, of Sandal in Yorkshire; and of the Family of the Deceased, as well as of the Relations of the late Dr. Ruffell.

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Differtatio Medica  
I N A U G U R A L I S,  
*De Emeticorum Ufu in variis Morbis tractandis :*

Q U A M,

FAVENTE SUMMO NUMINE,

*Ex Auctoritate ampliffimi SENATUS ACADEMICI,  
et nobiliffimæ FACULTATIS MEDICÆ Decreto ;*

PRO GRADU DOCTORATUS,

SUMMISQUE IN MEDICINA HONORIBUS ET PRIVILE-  
GIIS, RITE AC LEGITIME CONSEQUENDIS,

Eruditorum examini fubjicit,

JOANNES FOTHERGILL,  
ANGLO-BRITANNUS,

*Ad Diem 13 Augufti, borá locoque folitis.*

EDINBURGI,

M,DCC,XXXVI.

**T**HE following Inaugural Thesis was written when the Author was little more than twenty-one years of age, and before Baron de Haller's immense work of *Physiology* made its appearance, and diffused new light upon the Nervous System.

Publications, under the character of *Juvenile Attempts*, do not always afford conclusive evidence of a rising and superior genius; they are too frequently the productions of indigent individuals, who are always to be found in colleges, and who subsist by the indolence or ignorance of wealthier students, furnishing them with performances to which they have no better claim than what the mere exhibition of their names on a title page gives them. But whatever merit may be found in this Essay, I have authority to say, that it was the genuine production of the author, under whose name it was published, without any assistance either in the matter or the composition.

The subject is an important one, and too generally interesting for the Public not to wish for a translation of it into English, especially as most of the Doctor's subsequent pieces were originally written in that language.

E.

*Viris*

*Viris præclaris,*

*Præceptoribus suis plurimum colendis,*

JOANNI RUTHERFORD, Med. Doct. atque in Academia Edinburgensi Medicinæ theoreticæ & practicæ Profeffori :

ANDRÆ ST. CLAIR, Med. Regio, Medicinæ theoreticæ & practicæ in eadem Academia Profeffori :

ANDRÆ PLUMMER, Med. Doct. atque ibidem Medicinæ & Chemiæ Profeffori :

ALEXANDRO MONRO, R. S. S. & in eodem Lyceo Anatomix & Chirurgiæ Profeffori :

N E C N O N

CAROLO ALSTON, Med. Doct. & Reg. Botanices Profeffori :

*Ob plurima in se collata beneficia, hoc specimen inaugurale, quod exegit mos laudandus Academiæ,*

*Omni quo par est obsequio  
& exiftimatione offert*

JOANNES FOTHERGILL, A. & R.





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# Differtatio Medica

## I N A U G U R A L I S,

*De Emeticorum Ufu in variis Morbis tractandis.*

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### P R O Æ M I U M.

**Q**UUM corporis vigor, mentis acumen, fas-  
lus perfecta præfens, futuræ stabilimen-  
vitæ constantis et integræ dulcedo, magnâ ex  
parte ventriculi, visceris prænobilis, fata fequan-  
tur; nihil arduum aut moleftum ducebant tum  
veteres tum recentiores medici, quo minus in  
vado effet tantæ utilitatis negotium. Experien-  
tia gnari facti fuerunt, fi fofpes effet ventriculus,  
minus metuendum effe reliquis; eo autem malè  
fe gerente, incolumem diu hædere totius corpo-  
ris fabricam non poffe. Indies quoque comper-  
tum eft, quòd arthritis, hydrops, fcorbutus, ta-  
bes, infania, febrefque peffimæ (et fi quæ gravi-  
ora mala fupersint, et hominibus infensa magis,) rariùs attollunt capita, illæfo interim ventriculo:  
et fi forte nafcantur aliunde, fæviunt eò magis,  
quo magis à fanitate recedit princeps hæc ani-

malis officina. Hinc itaque liquet, quantum naturæ ministris incumbit, ejus incolumitati enixè prospicere. Ipsius autem ventriculi, ejusque contentorum vitia, tum et morbi exinde nati, quorum fibræ altiùs hærent, opem sæpe poscunt, quæ depletione tentatur; neque ad culpam horum delendam, prognatasque labes eradicandas, feliciùs adhibetur sæpissime remedium, quàm evacuatio per vomitum facta. Hac unicâ intentione adeo celebrata fuit Emesis apud veteres medicinæ patronos; ut etiam fanis, si fani persistare voluissent, hoc medicinæ genus præscripserit (*a*) Hippocrates, quod sæpius repetendum suavit, licet aspera et intractabilia admodum essent medicamenta vomitoria, veteribus familiaria; nec certe sine decumbentium fastidio, vel medicorum sollicitudine, porrigenda.

## P A R S P R I M A.

x. **E**ST autem vomitus ea ventriculi, diaphragmatis, et musculorum abdominalium actio, quâ illius contenta, quasi inter præla compressa, vi magnâ sursum per os rejiciuntur. Horum siquidem viscerum contractione sursum urgentur omnia in abdomine contenta viscera, constringitur inde pylorus, dum quæ in ventriculo hæret materies, illius (*b*) et ambientium vi musculari in orificium ejus superiùs impressa, illud

(*a*) Hippocrates de diætâ, lib. 3. & alibi passim.

(*b*) Wepfer de cicuta aquatica, cap. 15. Hist. 1.

dilatata, et per contractas œsophagi fibras longitudinales facilem sibi parat exitum.

2. Stimulus quicumque validus, ventriculo inditus, ejusque nervis applicatus, actionem hanc incitare potest, ob commercium quod obtinent ventriculi nervi cum eis, qui musculis abdominalibus et diaphragmati inserviunt.

3. Copia etiam ingestorum nimia atque moles, licet haud alio, saltem parum ingrato potiantur aculeo, nauseam, deinde vomitum excitare queunt; cujusmodi sunt, aqua egelida, aromatibus imbuta, suaviaque, nec non dapés illæ quæ gustui summo pere blandiuntur, avidè et sine norma deglutitæ; quicquid porro nervos ventriculi irritat, aliave aliquâ ratione æquabilem horum liquidum fluxum perturbat admodum, vomitionem ciet; qualia sunt capitis contusio vel concussio vehemens, jactatio in nave vel rheda inassuetis, valida imaginatio, sive rei cujusdam injucundæ memoria; hæc enim aliaque similia delicatulos summo urgent quandoque fastidio vomituque.

4. Attamen compertum est, objecta omnia, stimulo licet prædita, haud æquè certò vires suas in ventriculum vicinaque exerere, sed nunc per unum ex emunctoriis, nunc per alterum, promoveri secessum: quædam itaque quæ ferè perpetuò vomitum producere constabat, quæque præ cæteris huic muneri obeundo maximè accommodata esse docebat experientia, in unicum hunc usum seposuit vetustas. Ἐμετικά hæc appellabant Græci, VOMITORIA Latinis audiunt.

5. Mancus verò fuit horum apud veteres catalogus, licet amplus; pauca enim vomitoria

cognita habuerunt, quæ non acerba admodum et inclementia, vel lenia prorsus et invalida, comperiuntur; si modo simplicia eadem, eisdem insignita titulis, apud nos hodie prostant, ac apud istos olim: uti cuique patebit, antiquorum scripta evolventi. Veratrum aliquando lethale fuit, infida quoque aliorum actio. Non mirum itaque, si morbo graviore torqueri, vel ad aliud quodcunque subsidii genus confugere maluerint ægroti, quàm durum et immite, vel lenius, at incertum, sæpe infructuosum, experiri medicamen: quo contigit ut absterritus quandoque æger, medicum abhorreret; medicus pariter medelam, quæ tanta pollicita est, propinare dubitaret: unde uterque incommodum haud leve sæpius tulit. Atque licet Hippocrates rationem intellexerit temperandi emetica; alii tamen multi, minus solertes, spe suâ sæpe exciderunt. Neque chemia, quæ tot præclara medicamenta detexit, ulla fere suppeditat emetica, quæ tenellis et delicatioribus tutò dare licet: quin et dolebat suo tempore Sydenhamus, desiderari adhucdum emeticum *tutum, et satis interim efficax*, quale in celebri radice Ipecacuanha passim hodie experiuntur practici. Hujus instituti non est, singula, quæ vi emeticâ pollent, recensere, horum saltem classes ratione virium indicâsse sufficiat.

6. In *lenia, vehementiora, et fortissima* vomitoria, distinguendi hunc evacuantium ordinem, mos quibusdam obtinuit: nec quidem ineptè; diversa enim ista simplicia, quæ ad vomitum ciendum hodie usurpantur, commodè fatis sub  
triplici

triplici hac ferie difpertiri poffunt. Nulla tamen fides efficaciz, fenfibus patefactæ, odori faporive videlicet, habenda eft: fed experientiz foli horum credenda diftributio.

7. Emetica quæ *lenia* appellantur, gemini funt ordinis; *imo*, Recenfentur ea quæ mole-fuâ, vel irritamine levi, moli unito, ftomachum laceffunt; qualia funt, aqua tepida, vifcofa, faccharata; mellita, oleofa, falita, jura pinguia, infufa theæ viridis, cardui benedicti, florum chamæmeli, aliaque ejufmodi plura, ex diverfis plantis aromaticis elicitæ. *2do*, Huc pertinet emetici cujufdam fortioris dofis refracta, quæ ftimulo gaudet tam valido, ut naufeam, vomendique conatum unum alterumve provocare poffit, nec ampliùs urgeat. Ex falium numero hæc plerumque petuntur, quæ humoribus gaftropicis ftatim folvuntur, et celeriter undiquaque difperfa, applicantur nervis, mox furfum rejiciuntur, penitusque epotis liquidis eluuntur foluta, ut brevi quiefcant omnia. Filum per cæfophagum trajectum, irritatio gulæ, per pennam oleo madefactam; idea fastidiens, inaffueta navis agitatio, currûs per loca afpera ducti conquaffatio, animi denique pathemata leviora huic ordini confentiunt. Noviffimè tamen memoratas caufas quibusdam vomitiones inducere perquam violentas haud diffiteor; plerifque verò non item, neque eos diu et fortiter fimul moleftare folent.

8. *Fortiorum* classis fit ex prioribus § 7. *n. 2do*, auctâ faltem dofis, vel caufâ; aut ex iis quorum firmior compages, et hinc tardior effectus, fed vehementior: namque emiffæ particulæ vellicantes,

tes, paulatim in cryptas plicasque ventris rugosi sese insinuant, nervulis adhærescunt, molestiam creant, augentque, nec ingeminato vomendi nisu, velatis sedibus excutiuntur, usque donec eorum vires repetito opere decoquantur; hinc emesis protractior, nec non vehementior. Medicamenta pleraque sursum purgantia, hodiernâ praxi maximè usitata, huic classi addenda sunt, uti v. g. asarum, ipecacuanha, radix raphani rutticani, semen sinapis, scilla, horumque variæ præparations, combinationes, ex vegetabilibus. Ex metallicis sales quidam Chemiæ progenies, ut vitriolum Martis, et salia vitriolica: sed palmam præ aliis meruisse videntur, quæ ex Venere acquiruntur, sal sc. cupri ejusque tinctura. His addendi sunt tartarus emeticus, et quorundam ex serie sequenti imminuta dosis.

9. *Fortissima* nuncupare licet ea, quæ ars dogmatica et maximè rationalis, ob sævos et atroces effectus sæpius expertos evitat, quæque non sine imminente machinæ periculo exhiberi posse perennis docuit observatio, quæ rariùs, nisi ab audaci medicaastro, vel in morbo quodam acerrimum poscente auxilium, à methodico præscribuntur; licet inter hanc et prægressam classem, exquisitas metas apponere, difficile quidem sit. Plurima hujusmodi suppeditat vegetabile regnum: eminent imprimis *καλῶ* purgantia, quorum amplificata dosis, præsertim si ex resinosis desumatur, crudeles vomitus frequenter excitat. Resinosa etenim humoribus nostris parum miscibilia sunt, indissoluta cavo ventriculi accrescunt, summos concitant dolores, spasmos, et immanes

per superiora depletiones: evincunt hoc cruciatu isti, qui ægrotis superveniunt post ingestam jalapi resinam, aut ejusmodi quodpiam, non rite per attritum solutum, vel miscibile aliâ quavis ratione factum; dum forte nativo suo sapone fraudantur humores inquilini, et aquosâ pituitâ plena sunt omnia. His annumerari possunt, helleborus albus, tithymali species nonnullæ, nicotiana, et plantæ aliæ permultæ *deleterię* dictæ: classẽm augent, stibiata acriora, et illa quoque emetica quæ dat Mercurius, unâ cum plerisque metallicis venenatis.

10. Ex tradita hæctenus descriptione liquet, *1<sup>mo</sup>*, Vomitum excitari non posse, sine quodam aculeo (intelligi velim omne id, quod liquidi vitalis fluxum sive nervorum actionem mutare queat) systematis nervosi regioni cuidam applicato. *2<sup>do</sup>*, Quòd ex illius in nervos, horumque in musculos, § 1. actione, necessariò fit contentorum gastricorum evacuatio, denique *3<sup>tio</sup>*, Quòd hæc neutiquam evenire possint, sine partium quarundam compressione forti, aliarum ingenti concussione, et insigni corporis universi motu. Lenissimæ etiam vomitioni hæc semper adsunt: crescunt ut extenditur emetici potentia, et adaucto stimulo, usque in fabricæ ruinam evehi possunt.

11. Quum itaque præfatæ conditiones nunquam non *Ἐμέσει* conjunguntur, quum ab hisce omnino pendeant pleræque ex iis mutationibus quæ ab emeticis sperantur, producuntur; effectus horum ex triplici illa causa nascentes, quinam sint,

I  
rimaturus,

rimaturus, his quæsitis responsa expediam; scil. Quid valeat emeticum, quatenus est stimulus? Quatenus evacuet? Quatenus denique vi suâ mechanicâ totum corpus afficere queat?

## P A R S   S E C U N D A .

*De Emeticorum usu, à stimulo suo derivato.*

12. **N**ULLA adhuc instrumenta in corpore animali invenit anatome, quæ stimulorum objecta propriè existimari possunt, præter ipsos nervos; qui effectus horum, quales quales sint, primariò patiuntur, aliasque ad partes propagant, uti multiplicibus constat experimentis: hæc enim docent, quòd non modo in ipso puncto cui irritans applicatur, mutatio accidit; quin et ad nervi fontem, terminum, ramorum pullulantium fines derivatur effectus, nec non ad furculos, oppositam corporis plagam lustrantes, à causa licet diversa.

13. Effectus imprimis sunt, energiæ vitalis ad partem ita affectam accessio major, in aliis ejusdem diminutio; et perdita demum æquabilis lenisque ejus divisio, cursu magis accelerato, turbatoque simul. Hæc verò omnia, gradûs respectu, diversa futura sunt, et plus minusve conspicua, prout causæ laceffentis vehementia et copia, nervorum indoles, numerus atque moles, tegminis denique quo involuti sunt crassities, est diversa.

14. Causam



14. *Causam hanc, sive energiam, § 13. esse liquidum subtilissimum, mobilissimum, omnibusque fluidi dotibus communibus præditum, è cerebro, jugi, leni, pacato motu derivatum in singulas corporis partes, agnoscunt plerique Doctores. Nec inficias ibit, qui attentè perlegerit quæ de hac re scripsit (a) Boerhaavius; vel quæ ordine adhuc lucidiore exposuit inclytus noster Anatomix (b) professor, perpenderit.*

15. *Neque admodum verosimile videtur, effræno vel præcipiti quovis impetu spiritus animales unquam ita rapi, ut enormium tot effectuum causa sint, vel tot morborum essentiam constituent; hancve in motum proclivitatem ab ingenti quadam et præternaturali mobilitate oriri posse: Quippe quòd spirituum impetus à fortibus vitæ viribus solummodo pendeat; cum tamen in nullis frequentiùs occurrant morbi à systemate nervoso malè affecto nati, quàm in eis qui oppositâ potiuntur indole, laxis scil. debilibus, et quibus vitæ vires parum firmæ sunt. Legibus certe œconomix perquam videtur consentiens, liquidum hoc, nunc paulo celeriùs, nunc lentiùs moveri: sed tantum interessè discrimen inter summam velocitatem, pigritiamque summam, ut sola sit hæc morborum origo, haud facile conceditur. Spirituum inæqualis distributio tumultuum plurimorum, qui nervis vitio dantur, parens esse potest, omniaque ista phæno-*

(a) Boerhavi Institutiones, § 275 ad 292.

(b) Monro's Anatomical Treatise of the Nerves.

mena, quæ morbos, nervosos dictos, comitari solent, longè facilius hoc filo duce panduntur; nec alia suadet musculorum actio.

16. Pungens quodcunque satis acre, nervo, ejusve propagini appositum, inæquabilem hanc dispersionem efficit, ut spasmi et convulsiones ad necem usque sævientes ostendunt. Peragit idem quoque compressio, in nervi cujuscunque insignioris ortum facta; aut obstructus, alia quavis de causa, spirituum per suos canales egressus, unde propinqui pleniori horum rivo lustrari debent. Hanc augent diathesin, vel minuunt summo opere diversa fluidorum et solidorum ratio, quæ unicuique ætati convenit; tum et propria cuique temperies: quo etenim tenerior ætas, quo mollior habitus, eò, cæteris paribus, promptiùs irritantur nervi, vel comprimuntur. Sententiam confirmat experientia. Rarò enim opiparè pascens pueros, quorum sanguis spiritibus dives, et insigni prædita mollitie cutis, inquinat contagium variolosum, si modo venenum haud fuerit mitissimum, quin excitantur contractiones horrendæ: neque rarò superveniunt insultus, epilepsiæ veræ prorsus æmuli. Nec semper ob egestatem liquidi vitalis, invadunt insultus hysterici, cum otiosas, et luxu solutas feminas adorianatur magis, quàm quibus fors angustior obvenit.

17. His idcirco ita positis, generalem hanc regulam licet statuere; nempe si morbus à stimulo particulari cuivis parti applicato nascatur, huic succurrendum est, vel destructione causæ stimulantis,

stimulantis, vel alterius applicatione parti adversæ; sic etenim restituto æquilibrio solvitur morbus spasmodicus.

18. Effectus memorati § 13. nervis præcipuè et musculis contingunt. Alii tamen et diversi vicinas sæpe partes corripunt, uti dolor, cutis rubedo, calor; humorum affluxus, tumor; vasorum compressio, obstructio; horumque destructio, suppuratio, gangræna. Hæc internis juxta et externis corporis partibus eveniunt.

19. Generales aculeorum virtutes hætenus enarratas possidet remedium de quo nunc agitur. Hoc tamen sibi ferè proprium obtinet, quod emeticorum actioni certiores plerumque limites præscribere liceat, quàm interno cuiusvis stimulantis remedio. Hæc enim quandoque frangunt repagula, sæviuntque ferociùs quàm expedit, vel segniùs agunt; dum emetici vis ad votum ferè evahi vel reprimi potest, si atrocissima tantummodo excipias venena.

20. Ex dictis [§ 13. ad 20.] patet quid valeat emeticum quatenus est stimulus. Insignes equidem præstat effectus, è quibus eminent sequentes. Lenior apoplexiæ species, quæ ab inerti frigidâque pituitâ nascitur, si modo à causa recente, nec corpore valde senili accidat, emetico prudenter exhibito sæpe solvitur: inde siquidem crassa subiguntur, excutiuntur; aperiuntur nervorum oscula, horum tramites expediuntur, incitato simul torpescentis sanguinis motu. Similes in simili paralyfi præstat effectus.

Pueris frequens est morbus epilepsia, ab acri  
quovis

quovis rodente nervos, eosque vellicante. Adultis sæpe contingit ab eâdem causâ, tum et affectionibus animi gravioribus, à dolore sævo membra cruciante, à turbato spirituum fluxu, qualis hypochondriacis et hysteriis familiaris est. In his casibus, si mobilis sit mali fomes, iterato vomitorio excutitur.

Membrana ista musculosa, quæ tracheæ segmenta cartilaginea sibi invicem adnectit, ex fibris conflatur musculosis contractilibus spasmobnoxiiis, in his præcipuè quibus genus nervæum est mobile nimis. Nictu oculi sæpe constringuntur fibræ, adducuntur sibi mutuò cartilaginee, pertinaciter elongationi solitæ repugnant, crebros trahit spiritus æger, avidè captat auras, profundè gemit, tandem labore fatigatus, et mox angore succubiturus, præ defectu spirituum solum sentit spasmus, explicatur pectus, et vivere de novo miser exorditur. Quid prohibet quin subitò propinata dosis salis vitrioli, cupri, hujusve tincturæ, quæ irritando ventriculum, ciedo vomitum, spirituum iter tramitemque mutando, tumultus hosce sedet? omni certe vacat periculo.

Ubi sanguis eam nancisci indolem incipit, quæ apud veteres *atra bilis* dicta est, ubi functiones naturales labascunt propter spirituum absentiam; quando quosdam tantummodo nervos iniquè petunt, hi certos duntaxat mentis corporisve actiones exercent; vix præstantius exhibetur remedium, quam emeticum certis cautelis moderatum, ut postea dicendi erit occasio.

In morbis spasmodicis, aliisque plurimis nervosi ordinis, qui proventum ab inertia et languore chylopoieticōn, ducere videntur, plurimum prodesse visa sunt emetica. Chorea Viti, malum certè paucis hujusmodi pertinaciâ secundum, vires tamen hujus remedii (a) quandoque fateatur. Atque licet solâ vi stimulante in his morbis non juvent, eâ tamen plurimum profunt, spirituum auctiorem fluxum versus organa sollicitando, quæ penuriam patiuntur, quæque exinde deveniunt morbis opportuna.

In malis denique plerisque chronicis, quum pituita crassa desesseque habitum obtundit, ignavius hâc obsita vibrant solida, fluida jam viscida difficilius propelluntur, perditæ vel depravatæ facultates universæ liquidi vitalis inopiam segnitieque demonstrant, uti in glutine vel acore spontaneo; emetica, licet curationem haud absolvant quâ stimuli, aliis tamen remediis palmam præripiunt; præsertim si ad reliquos vomitorii effectus respiciamus.

21. Actionis istius § 18. alter effectus est, fluidorum tenuiorum festinata secretio; quæ duplici ratione comparat Ἐρέθισμα; primò, motum sanguinis intendit in vasis majoribus, horum crebriorem et fortiorem in fluida reactionem excitando, attenuationem conciliando, et hinc fecesui aptitudinem; dein ipsis secretionis organis præparationem expedit, et transitum humorum accelerat. Hinc ab eodem stimulo diversæ au-

(a) Cheyne's Essay on the Gout, p. 113. Edit. 4.

gentur secretiones, prout diversimodè in hoc, vel illud organum secretorium determinatur.

## P A R S T E R T I A.

### *De Emeticorum Ufu, evacuando producto.*

22. **E**METI effectus, quatenus evacuat, in duplicem ordinem partiri absonum haud videtur, *1 mus* est, Depletio ventriculi, contentis sursum rejectis. *2 dus*, Aliarum partium excretio aucta per conatus vomendi. Quum verò hæc pro causa proxima haud agnoscat vomitorium, inter effectus quos mechanicè præstat emesis commodè magis recitari potest, atque evacuatio universalis appellari meretur: altera particularis, sive eorum expulsio, quæ jam in ventre stabulantur, vel eousque per aculei vim pelluntur; vel denique per *ἀναδρομήν* à viciniis in eum advehuntur; de quâ proximè sermonem instituere jubet bona methodus.

23. Nocentia per os ingesta, aut in ventriculum aliunde delata, promptam emetici medelam exigunt, neque ullum novit medicina potentius adjuvamentum, ad prælem horum morbosam radicis exstirpandam, vel ad symptomata quædam atrocia, fata hinc, lenienda.

24. Ex priorum numero, § 23. ex ingestis scilicet, cibi potusque in censum meritò vocantur. Sors enim vitæ incluctabilis, quamdiu vitales auras carpinus, hos effecit necessarios; rationes supprimo. Et materiei diversissima  
indoles,

indoles, ex quâ comparantur alimenta, et à nostrâ sæpissime aliena, quorundam incuria, improba aliorum ventris ingluvies, denique vetiti aut nocivi appetitus, error in escarum potuumque delectu, et mensuræ justo moderamine, vitia induxerunt ventriculo multiplicia. Hinc ferax malorum progenies, stomacho ipsi crudeles minitans dolores, ultimisque vasorum anfractibus nocitura. Quæ sane singulatim explicare jubet inceptum, denegant autem temporis angusti limites. Et quidem eis excutiendis operam frustra navarem; quum pensum istud omni numero absolutum, vestris sub auspiciis, non ita pridem, in lucem prodiit, in dissertatione (a) eleganti, *de noxis ex cibi potûsque usu & abusu oriundis.*

25. Copia ingestorum major justo mala parit ibi descripta: his levamen afferre solet depletio; quæ, si æger sit *εμερῆς*, vomitoriis facienda; hæc enim ratione citissimè auferitur materies ventriculæ gravans, et præcavetur ne incocti alimenti reliquiarum pars quævis in corporis interiora ducatur.

Vitiata qualitas idem petit auxilium, dum adhuc in cavo ventriculi remanet materia nociva, aut non longè ab eo propagatur. Sic, quæ nativâ gaudent tenacitate, majore quàm quæ domabilis sit per corporis vires, suum secuta genium corrumpuntur, abeuntque in ductile phlegma. Eadem res est, si expultrix ventriculi facultas præpedita sit, ut in debilibus sæpe fieri testantur

(a) Autore Henrico Tong.

practici: tunc enim, licet nec copiâ nec qualitate insigniter vitiabili gaudeant, sponte tamen labem contrahunt ingesta, natam ab ipsâ morâ auctamque. Hinc prodeunt acrimoniæ diversæ species; hinc mucî et pituitæ tenacis scaturigo: quæ prout singulatim dominantur, vel conjunctim permiscentur, adjuvante hominis temperie huic illive proclivi, producunt diversa et nonnunquam planè atrocia symptomata. Sic multiplices appetitûs depravationes, deletio integra, imminutio vel excessus ingens; sic vitiata, imminuta vel sublata coctio vel incocti corruptio, hæc sæpe pro suis causis proximis agnoscunt.

Ex ægroto ipso facilè discendum erit quid prægressum fuerit prædisponens; atque hinc patet indoles materiæ, et quibus utendum remediis. Vomitoria fomitem exhauriunt, causam proximam funditûs eradicant: hisce tamen solis non fidendum, sed exhibitis roborantibus (inter hæc repetito, post debita intervalla, vomitu) imâ de stirpe tandem morbus reciditur.

26. Substantiæ quæcunque acres, casu vel industriâ in ventrem acceptæ, vel medicamenti, vel veneni titulo, si molestia denunciât fabricæ noxam insidiari, citissimè sunt expellendæ, et per ea loca præcipuè, quæ portam dant maximè periculis immunem, quâ emigret hostis, intactâ aliarum partium salute. Si nullâ aut parvâ copiâ tubum intestinale ingressæ sunt, emeticum cæteris remediis longè præstantius, et curationem sæpe absolvit; neque erit omittendum, etiam si



etiamfi portiuncula tantummodo hæreat adhuc in ventriculo. Classis prima § 7. amplam præbet pharmaciam, quâ plurimæ venenorum species debellantur et expelluntur; atque si antidoton univerfale fit, aqua tepefacta copiofè ingefta, id forte fuppeditat. In delectu tamen horum prudentiâ opus eft; expulfio quandoque haud implet vota, quin teneræ partes quibus applicantur, ab iftorum injuriis tuendæ, mitigandi dolores, & veneni fævities compescenda, etiam dum citam molimur ejectionem. Hîc iterum afumpti natura cognita medenti auxilia indigitat, ad infelicis ægri levamen tempeftivum procurandum. Sic falia alcalica diluta toxicis opponuntur acidis; faponacea mifturam conciliant oleofis; aquofa fales quofcunque dividunt, sternuntque vires; acria retundunt ea, quæ oleo vel glutine vifcofo gaudent; et fic de cæteris exiftimandum. Confulat lector quæ de hâc re egregiè fcripfit (a) Boerhaavius in capitulo *de antidotis*.

27. Neque tantum per emetica fit ingeftorum evacuatio, fed et humorum omnium qui in ventriculum deferuntur. Proveniunt illi, vel à vafis ipfius ventriculi, vel vicinorum: atque equidem nullibi clariùs confpiciendus pungentium effectus, § 21 expositus, quàm in hoc vifcere. Id patebit, fi attendamus ad nervorum per tunicas ampli ventriculi difperforum frequentiam, ad glandularum numerum, earumque munus, ad ca-

(a) Inftitutiones medicæ, § 1119.

pacitatem denique vasorum quibus hoc viscus instruitur, molis respectu. Mollities tunicarum facilem dat nervulis introitum, cavitas spatiosa latam exhibet superficiem. Hinc nascitur insignior actio, sive gastrici liquoris uberior secretio; quæ, quum semper larga sit, si augeatur, necessariò totum corpus quodammodo mutat, humores serosos dispellendo, exsiccando: et hinc alii emeticorum effectus pulchri, in morbis à ferrosâ vapidâque colluvie natis; ut in catarrho, leucophlegmatîâ, diabete, et fœdo isto morbo virginibus exsecrato, qui ab excretorum colore pallente nomen accipit; aliisque hujusmodi, de quibus in sequentibus fusiùs dicendum.

28. Finitima ventriculo sunt hepar atque pancreas. Utraque sua secreta fluida in ejus cavum quandoque immittunt; quæ vel copiâ, vel acrimoniâ, vel utrâque chylopoiesin temerare possunt: bilis sæpius, rarius succus pancreaticus, morbos excitandi reus incusatur. Bilem culpabant veteres, ac si morborum sævissimorum parens esset: hanc sententiam multi inter hodiernos improbant, neque bilem esse malorum causam adeò frequentem contendunt. Si verò probè patuisset his quid per bilem antiqui voluerint, saltem ex iis sagaciores haud temere abjicienda fuisse eorum dogmata forsan judicassent. Non enim solus ille liquor ab hepate, ejusque vesicâ suppeditatus, *Bilis* titulo insignitus fuit; sed totius sanguinis molis pars haud aspernabilis, et ipsissima illa quæ recentiores *oleum* vulgò appellant; quod, ut ex chemiâ discimus, æquè fertilis morborum

morborum stirps hodie existit, ac fuit olim sub nomine celebri *Bilis flavæ*. Verùm hîc agitur de bile vesiculariâ et hepaticâ, in ventriculum sursum propulsâ, vel de liquore alio quovis, ibi advenâ, qui similia parit incommoda ac ipsa bilis; et talis est humor oleosus, interdum vomitu rejectus, flavescens, horrendâ dotatus amaritie, nec unquam penè obliuiscendo sapore, bilem ferè referens, si solùm excipias quòd bilis in igne ardeat nunquam, hic autem instar olei sinceri flammam concipiat, si in ignitos carbones evomatùr. Nascitur ab oleosis ingestis, loci calore mutatis in illuviem hanc ingratiſſimam, accedente gulâ nimis infatiabili, ut monet Horatius,

*Nempe inamarescunt epulæ sine sine petita;*

*Illusque pedes vitiosum ferre recusant*

*Corpus. -----*

Et vera bilis, atque flavescens illuvies ejus æmula, similiter hâc dote gaudent, quòd sc. stagnatio, in loco calido, acriores et magis horrendas utrasque facit: eâdem penè ratione ac oleum quòdcunque tẽpore leni et diuturno fotum, à sapore, blandissimo, odore non insigni, colore subflavescente, transit per diversos corruptelæ gradus ad summum usque putredinis fastigium, tandemque maximam gustui acridinem induit, exhalat mephitim olidissimam, et nigredine deformi ferit oculos. Similia planè patitur utraque mox supra descripta bilis, iisdem subjecta legibus, ubicunq̃ue in corpore congesta, donec suam promovet expulsionem irrequietus hospes.

Aliter enim diris et acerbis doloribus, torminibus, nauseis atque vomitibus, pœnam non finientibus, sed ad mortem usque vexantibus, excruciatum miserandum æger; præsertim si temperies hominis calidior, solis ardor, victus denique rancescens, aut fermentescens, pabulum flammamque præbuerint. En cholera! morborum teterimus: febris accenditur, inflammantur viscera, laboribus succumbunt prostratæ vires, et nisi affideat lecto Sydenhamus alter, obrepens in viscera gangræna duos cum vita terminat labores. Intra confinia, quæ emetici vim sustinent, materies sedem habet, quæ causa morbi est. Indicatur ablatio causæ; cur non emeticis, aut deorsum purgantibus, vel utrisque tentatur egestio, cum in primis viis adhuc stabuletur? Haud sanè immeritò, in tantâ morbi feritate, horum usum repudiant medici prudentes: nam utcunque fructûs per plurimum in aliis, vel in inferiore ejusdem morbi gradu, præstat hoc vel istud medicamen; in violentâ tamen cholera, loris quam stimulis magis utendum est, ut facilè attendenti patebit. Acer enim et inflammans iste liquor, abraso priùs omni muco gastrico, et, quousque pertigerat, intestinali, nudis applicatur nervis, sævos excitat dolores, spasmos fortes, pertinaces, febresque adurentes incendit; vomitu perpetuo evocatur mucus superstes, causa provehitur, et continuato emetici impetu, reduplicantur effectus horrendi. Licet etenim minimo polleat aculeo, hic tamen, qualis qualis est, hosti indigenæ addit vires, stimulus stimulo committitur, et horum

rum fociato nixu perit æger. Si ad hoc stadium morbus non attigerit, neque spem occidunt mali ominis symptomata, ut curationem vomitoriis tentemus jubent omnia. Rei cardo est delectus medicamento peritus. Nec bilis, nec oleosa materies, sive bilis altera, omni fluido promiscuè unitur; hoc respuit, illud verò sequitur petitque. Quòd itaque ad misturam parandam maximè idoneum est, istud usurpandum; indolis morbi cognitæ habitâ interim ratione, cui semper opponi debet auxilium. Hinc saccharata, mellita, saponacea acescentibus permista, ea omnia quoque § 7. n. 1. recensita, quæ mole suâ plusquam erethismate quovis agunt, præ cæteris conferre videntur.

“Quandocunque bilis vacuanda est, inquit  
“ (a) Forestus, post juscula multa, vel post potationem liberalem, provocandus est vomitus;  
“ nam bilis ut oleum his supernatat, et ob id  
“ faciliùs evacuatur: adde quod acrimonia ejus  
“ temperetur mixtione harum potionum.” Norma certè in vomitionibus biliosis sanandis nunquam non observanda; neglecta quippe pessima quandoque profert incommoda. Catharticum temere ingestum corruptæ materiæ partem abripit ad inferiora, fortè et in sanguinem defert: hinc iterum novæ miseræ.

29. Tanta liquoris pancreatici diluvies occurrit rarò, quæ solitaria morborum causa queat haberi, natos tamen augere potest: quum enim

(a) Foresti observ. lib. xviii. obs. 3.

in sanitate larga adeò sit ejus secretio, ut Brunneri experimenta docent, in morbis ex lymphâ redundante ortis, deveniet adhuc copiosior, hujusque per emeticum evacuatio serosam colluviem imminuet.

30. Februum accessiones nausæ & vomitu plerumque stipantur, aliisque symptomatibus, quæ ventriculum malè affici significant. Cautè tamen erit distinguendum, an ab ipso viscere, an ab ejus contentis, oriatur ægritudo: alia enim curatio ventriculo, cujus membranæ vexantur inflammatione, alia corruptis sordibus gravato, inflammatione libero, subministranda. Antiquioribus haud adeò perspectum fuisse videtur, hoc viscus morbis istiusmodi æquè esse obnoxium, ac aliud quodcunque; donec Fredericus Hoffmannus (a), in suis exercitationibus, hoc malum sæpius obvenire docuit, quàm vulgò creditur. Signa posuit diagnostica, quibus scopulos latentes vitaret medicus, in quos facillimè alioquin impingeret incautus. Hæc omnia pro suo more, cum largo scœnore in libello *de cognoscendis & curandis morbis* exposuit Boerhaavius, nitidamque medendi methodum illi attexuit. Ab istarum commotionum, quæ in febris initio toties ventriculo superveniunt, veri fontis inscitiâ, lites istæ sollicitæ inter praticos agitatæ, de emeticorum fructu in hisce tractandis enato, profluxerunt. Adversus horum utilitatem hi strenuè arguunt, effectuum exitialium adducunt testes, et fronte

(a) F. Hoffman. Dissertationum Decad. 1.

torvo vituperant usus. Alii successus salutarès ad sidera tollunt, nec minus indubitata histori- arum fidem appellant, ad suas partes firmandas. Et quidem facilè liquet neutros à veritate peni- tús aberrâsse; Quantos etenim cruciatus indu- ceret vomitorium ventriculo, cujus vasa sanguine crasso turgent, et infarciuntur; cujus distracti nervi, levissimo contra ingesta collisu, atroces pa- tiuntur dolores; cujus denique tunicæ distensæ tumore, duritie, atque dolore, phlegmonem ve- rum in corporis exteriori natum omnino refe- runt. Quantas itaque clâdes in hoc rerum situ editura est operatio cum tantâ violentiâ con- juncta? Sæpius autem vitia, ab inclusis conten- tisque producta, molestiarum autores existunt: tunc sanè laude dignos præstat effectus, et Hip- pocratem, Sydenhamum, et clarissimos quosque in arte viros, usum eorum sancientes habemus; nec non et ratio suffulta praxi idem effatur. (a)

“ Si vomitus, ait Sydenhamus, vel inanis aliqua  
 “ vomendi propensio, interturbaverit ægrum,  
 “ medicamentum emeticum omnino præscriben-  
 “ dum erit.” “ Namque, ut testatur (b) Hip-  
 “ pocrates, si quis homini vomenti aquam mul-  
 “ tam bibendam dare velit, ἐκκλυσθήσεται διὰ τὸ  
 “ ἐμέειν σὺν τῷ ἐμέτῳ, οὐτῷ μὲν διὰ τὸ ἐμέειν ὁ ἔμελος  
 “ παύεται.” Nec solum hoc commodum scene-  
 ratur, quin etiam et medico et ægrotanti per to-  
 tum morbi decursum quæstui ingenti erit, uti ex

(a) Sydenham. de morbis acutis § 1. cap. 4.

(b) Hippocrates de locis in homine, Clas. 2dæ, p. 16.

Sydenhamo discimus. (a) “ Sanè vomitorium  
 “ propinare, ubi istiusmodi prægressa est vo-  
 “ mendi proclivitas, adeò est necessarium, ut  
 “ nisi humor ille expellatur, in sentinam com-  
 “ plurium malorum difficilium sit abiturus, quæ  
 “ crucem figent medico toto durante medica-  
 “ tionis tempore, ægrumque in haud leve peri-  
 “ culum conjicient. Ex horum præcipuis et  
 “ maximè solitis est *Diarrhœa*, quæ ut plurimum  
 “ in defervescentia febris consequitur, quoties-  
 “ cunque emetica, quando ea suadebat indica-  
 “ tio, omissa fuere.---Porro etiam compertum  
 “ habebis, etiamsi proclivitas illa ad vomendum  
 “ jam pridem præterierit, diarrhœam tamen,  
 “ quamprimum vomitorium exhibueris, ple-  
 “ rumque cessaturam, dummodo emetico feren-  
 “ do pares fuerint ægri vires.” Nec sane teter-  
 rimum rerum conspectum vir egregius delineavit;  
 namque putrida hæc materies in ventriculo  
 stagnando magis putrida evadit, perque bibula  
 vasorum orificia, vacua jam per calorem et li-  
 quidi jacturam reddita, in sanguinem ducitur,  
 sordibus malignis cruorem polluit, et febrem  
 omni numero sæviorem reddit; quæ cuncta  
 feliciter anticipata fuissent, si vomitorium,  
 quamprimum se patefecit hæcce propensio, fuisset  
 exhibitum. De emeticorum delectu moni-  
 tum hîc quoque repetendum erit, scil. quod ea  
 eligamus, quæ sordibus abluendis aptissima, quæ  
 harum indoli adversentur, eamque mutant vel  
 corrigant; quæ denique diluentis vicem gerant,

(a) Sydenhamus ubi supra.



si forte (quòd pote est) portio aliqua in sanguinem hauriatur. His intentionibus arrident classe *1 ma*, § 7. memorata, cum nonnullis ex § 8. decerptis efficaciora reddita; oxymel scilliticum v. g. cum radice ipecacuanha; hausto dein largâ manu oxymelite simplice, aliove liquore tenui, prout res nata sit.

31. Dum de febribus agitur, cautelam fas est in memoriam revocare, quæ apud practicos plerosque prostat, nec præteriri debet; scil. quòd in omnibus morbis, ubi plethoram adesse, vel ad eam esse vergentem habitum, sua signa demonstrant, et simul ægri conditio vomitorium postularit, sanguinis missio semper præmittenda est; ne fortasse illud ingens conamen, et tetanus momentaneus, vasa distensa rumpat; vel major saltem quam par est sanguinis impetus ad ea loca feratur, in quibus resistentia minus firma vi cedat illatæ; disrupta vasa sua liquida fundant, et immediatè pereat ægrotus per apoplexiam, vel hæmoptoe, vel insanabili inde phthisi, pulmone labefactato, tandem trucidetur; aliisve visceribus pariter infractis è medio tollatur. Illa vomitio videtur optima quæ brevi post sectam venam cietur; certiùs enim incommoda evitantur à plenitudine cæterùm oritura; certiùs simul insequuntur emetici effectus salubres, præsertim si ex febrium genere sit morbus, qui utrumque expetit auxilium. Depleta siquidem per v. s. vasa, citò quandoque de novo turgent; vel ob sanguinis rarefactionem, vel ejus auctam molem per largos potus, in quos ardor et sitis ægrum impellunt,

pellunt, eadem nascuntur ac priùs incommoda : nec ante repetitam v. s. exhibere licet emeticum; quòd paucis post primam evacuationem horis tutò fuisset propinatum.

32. In febribus intermittentibus mirum quid exsequi videtur Παιδευσίς ἐμέτη, quæ effectus quandoque exhibet æquè difficiles explicatu, ac ferè ipsius morbi natura. Licet enim illius sedes præcipua sit in extremis vasis sanguiferis, aut aliquando forte in nèrvis; humorum tamen evacuatio, qui in alvo colliguntur, haud minimi est momenti. Prostant siquidem exempla hominum; qui vomitu solo curati fuerè; hocque vel spontaneo, à benignis naturæ auspiciis excitato, vel arte famulante inducto: dum interim sanguinis evacuatio, nisi in plethoricis, plerumque obsit, et grave medenti tædium pariat. At repetita prudenter emetica, corruptum in primis viis morbi fomitem sensim consumunt, subigunt, sanguinis fluxum accelerant; morbum denique vel tollunt, vel tutam expediunt febrifugo viam, quod cæteròquin vel morbi fomitem figeret magis, vel evacuatione, sursum aut deorsum excitatâ, proprias suas perderet vires.

33. Multiplices affectat natura vias, per quas domitam febrium materiem, aptatamque ut per portas arte casuve recludendas eliminet, iterumque sanum corpus reddat. Nunc per emunctoria certis excretionibus assueta, per salivam, vomitum, secessum, sudores aut urinas eam ejicit; nunc autem ad alia minus idonea loca despumationes

tiones emittit. Tumores ad exteriora nati, aliaque fimilia hujusmodi funt. (a) “*Quæ educere oportet, quo maximè vergunt, eò ducito per loca convenientia,*” omnibus est regula bene nota. Si per falivam febrem judicatam fore constet, manus auxiliatrices eo funt movendæ. In vomitu idem erit præstandum, si criticum eum esse novimus, vel à materiâ excitatum naturæ inimicâ; sedandum verò, si à ventriculo inflammato, et vomitus vomitu demulceri nequit. Eadem res est, si per alia quævis excretoria egredi tentet. Quò diutiùs enim in corpore sistitur cocta fluensque sanies, eò pejora creat incommoda. Triste, sed verum hujus rei præbet exemplum febris purulenta, quæ à resorpto tabo variolis sæpiùs supervenit, secundaria plerisque nuncupata. Nec maligna minus est aliùs cujuscunque febris acutæ materies critica putrescens, quæ instantem exigit evacuationem. Præstò adsunt remedia, singulis evacuationibus promovendis destinata: hæc usurpanda prout viam monstraverit natura. Advertendum tantùm est, quòd uti materies morbi cocta per cutis spiracula diffatur, corruptâ labe usque adeo inquinata ut sanos sæpè polluat; similis tamen ad interiora ventriculi et intestini, per horum exhalantia vasa deponitur, cathartico nunc, nunc emetico feliciter auferenda; ne forsàn, (b) “*Quæ per morbos post judicationem intus relinquuntur, morborum reversiones faciant.*” At-

(a) Hippocratis Aphor. § 1. Aph. 31.

(b) Idem. § ii. Aph. 12.

“ que suadet ea propter Celsus (a), *Vomitum post  
“ febrem eliciendum esse.*”

34. His numerosum morborum agmen liceat adjicere, qui bona et eximia multa ab hoc subsidio mutuuntur. Pauci enim ex chronicis existunt, qui emeticorum ope non indigeant; sed eorum recensio particularis ultra metas protraheret orationem. Morbi enim plerique, puerilis ætatis affectæ, diathesis rachitica, strumosa, saburra vermium fomes nidusque, victûs errores, atque similia, sæpe emeticis feliciter emendantur. Arthritis, hydrops, scorbuti stadium clementius, adultis infesta, quandoque lenimen ab evacuatione per superiora facta sentiunt; chlorosis et fluor albus molliori sexu, eadem sæpè poscunt auxilia. Catarrhus, diarrhœa, dysenteria, cœliaca affectio, morbusque omnis à serosa colluvie natus, vomitorii commodum agnoscunt. Vix opus est memorare, quantum ad grandævos annos comparandos conducant, idoneis intervallis exhibita. Hodie non desunt homines, qui veterum consilii memores, licet gulæ placendæ parum dediti, nec scopis indigentes ad reliquias crapularum auferendas, tanti æstimant vomitionem, ut bis terve per mensem contractas in stomacho fordes per superiora propellant. Illi, qui accuratam maximè vivendi normam servare studet, sæpius in potu victuque errare necesse est. Hinc seriùs ocyùsve culpa ingruit ventriculo, ibique formatur primò morbi futuri stamen: ægritudo sive nausea molesta interdum sentitur,

(a) Celsi medicina, lib. iii. cap. 7.

minuitur cibandi defiderium, aliaque imminent fymptomata, varia pro genio caufæ vitiique diverfo. Plerique ftatim ad tincturas celebres plantis amaris aromaticis, fpiritûs ardentis ope elicitas, confugiunt, iſtis confidunt, indulgent; donec horum ſub jugum miſſi torrefactis et effœtis viſceribus moriantur. Nullum quidem remedium novimus; quod tot tantaque eis polliceri videtur, qui ad cruditates generandas à vitæ genere ſedentario proclives funt; natum enim morbum aufert, cauſam proximam delet, eradicat, acorem eluendo quæ hanc plerumque conſtituit. Iis, itaque qui vitam ſtudioſam degunt, vel quorum corporis affectus exercitationes motuſque prohibent, qui denique artibus utuntur ſellulariis, vel qui ob aliam quamcunque cauſam eiſdem malis obnoxii vivunt, iis, inquam, crebrum emeticorum uſum commendarem.

## P A R S U L T I M A.

*De Emeticorum Ufu, à moehlicâ ſuâ Virtute petendo.*

35. **T**ERTIUM adhuc ſupereſt quæſitum enodandum, quid ſc. emetica profint, quatenus vim exercent mechanicam, et virtute moehlicâ expugnant morbos? Quæ itaque partes afficiuntur, quid patiuntur, quæ in reliquis exinde mutationes producuntur, et in toto corpore contingunt, proximè ſcrutandum.

D

36. Contractis

36. Contractis itaque [§ 1.] musculis abdominalibus et rigefactis, ferè instar columnæ istius ossæ, quæ posteriora tuetur, vi hujusmodi nullâ movendæ; compulso simul validè diaphragmate, cui inferiùs ossa pelvim constituenta immobilia opponuntur; omnimodo ventris infimi capacitas angustatur, dum hinc atque hinc, super subterque, contenta ejus arctissimè constringuntur; nec punctum ferè in tota regione abdominali ingentis pressuræ expers reperitur; cujus vim admodum insignem esse testatur vehementia, quâ sursum exploduntur ventris contenta: certa enim suadent experimenta, nullam inesse ventriculo potentiam contractilem, quæ ista possunt exhaustire; donec conspirans simul partium modò memoratarum compressio fortis evacuationem integram absolvat. Tantæ ergo violentiæ viscera subjecta mollia participes fiunt, unde insignes, utilesque effectus exspectandi.

37. Antequam verò harum disquisitio instituat, incolarum abdominalium actiones, methodo sequenti, generatim disponere haud alienum est; ut perspectis horum muneribus, faciliùs cernantur mutationes morbosæ, clariùsque patefcat quot quibusque modis in subsidium venire possit compressio vehemens, mechanica, alterna, in hæc viscera.

38. Horum munera præcipua sunt, 1<sup>mo</sup>, Ingestorum præparatio, ut naturæ egestatibus succurrendis nata sit materies. 2<sup>do</sup>, Hujus separatio, ut quæ refectioni apta sit ab ineptis amoveatur. 3<sup>tio</sup>, Eiusdem in sanguinem, per instrumeta

menta extra abdomen posita jam conversæ, ulterio-  
rior elaboratio. 4to, Secretio liquorum vitæ  
visibus egregiè famulantium. 5to, Denique par-  
tium solidarum et fluidarum residui, effecti nunc  
facti, à nutritiis separatio et ejectio. 1mo, Offi-  
cinam præparantem ventriculus et intestina te-  
nuia præbent. 2do, Fluidiora à crassis segre-  
gant vasa lactea et absorbentia. 3tio, Sanguis  
ad arterias amplas meseraicas, cæterasque per  
ventrem dispersas, perpetuam patitur concussio-  
nem, compressionem reciprocam, propulsionem;  
quæ omnia, in splene præsertim, conspicua.  
4to, Cruor ita subactus, per appropriatas portas,  
v. g. per hepar, pancreas, totamque glandularem  
catervam, ubique per infimum ventrem disposi-  
tam, perpetim emanat, indole et formâ mutatis,  
juxta determinatas organi cujusque naturæ leges.  
5to, Ramenta crassiora, corrupta, et per tubum  
protrusa, tempestivè excernuntur: sanguinis pars  
tenuis et aquosa, detritis onusta salibus, oleisque  
nutritioni ineptis, per renes abit, constituitque  
urinam. Cuncta hæc officia, tempore eodem, et  
eodem auxilio promoventur; alternatâ scilicet et  
constanti agitatione; quæ respirationis est comes  
assidua et necessaria. Patet enim, quòd si sistere-  
tur motus abdominis, et lenis ista succussio cessa-  
ret, nulla vis adesset, quæ per tot tamque angustos  
tortuososque canales, ingenti interdum oneri  
subjectos (ut ii sunt, qui per inferiora repunt)  
contenta in eis fluida propellere valeret: impe-  
tus quo vibrat cor, labori esset impar; et insignis

illa potestas, absorptio dicta, quâ fluida ex cavis intra venas hauriuntur, licet tanta ut nullis præscriptis finibus coercenda sit, citò deficeret. Nam sponte nata visciditas, cessante motu externo, canales paulatim obturaret, atque in exilibus tubulis tot impedimenta deponeret, ut sensim in omnibus progressus brevi tolleretur, in quibusdam visceribus, vel in omnibus, prout malum proserpsisset latius, aut arctiora castra metâisset. Et quidem morborum Ætiologia demonstrat, plurimos ex eis, qui abdomini infensi sunt, ex hâc vel istâ, vel utrisque simul causis nasci. Remedium igitur attenuans, motumque properans, præ cæteris indicatur.

39. Nisi itaque vomitûs, viscerum superficies contra se mutuò validè comprimuntur, eorum moles imminuitur, compinguntur tranantia fluida, atteruntur, propelluntur; adversus canalium latera urgentur, et quâ datur exitus confestim exprimuntur. Hinc secretio fit expeditior, celerior expulsio; crassi resolutio, ejusque subactio et ejectio; denique actionum omnium [§ 37.] muturatio, organis ipsis vigor, et, omnibus superatis obstaculis, agendi facilitas; ex quibus primariò pendent et quantitas et qualitas istarum secretionum, quæ sanitatis præsidia haberi possunt.

40. Interior ventriculi cavus conferto glandularum agmine vasisque exhalantibus obsidetur, ex quarum osculis, villosis, flexilibus, assiduò fluit humor, quo lubricus madidusque servatur  
ipse,



ipfe, defenduntur ab affumptorum injuriis nervi, promovetur chylopoiesis. Humorùm verò crassities, sive indoles mucosa, qui hæc loca salutant, accedente motu languidiore (prioris plerumque comite) necessariò secretionem minuit tardatque; glandulas infarcit viscidis, sensimque munus earum evertit. Hinc gastrici fluoris penuria, cruditas inde et indigestio, appetitus deletus, aut nimius, stomachi ardor, aliquando nausea sitisque. Eadem quandoque occurrunt mala, ab arefactâ sordium crustâ cavitati ventris obductâ; sicuti post febrem acutam diuturnam, ubi vulgus adstans, aut medicus fortè crudelior, injustè naturæ poscenti ipsam lympham denegabant. Diluentia in hisce casibus haud sufficiunt; hæc enim ulteriùs laxant vasa; hinc tardiùs propulsa fluida cunctando brevi crassescunt, haud parvo labore iterum solvenda. His infortuniis istud remedium haud infimi usûs est, quod præstat effectus supra enarratos [§ 29.] Instar enim pulmonis alterius totum abdomen censendum est. Munera quidem sibi propria singula viscera nanciscuntur, sed motus supervenit aliunde, quo perpetua fluidorum in unoquoque mutatio inducitur, provehitur; perinde ac in pectore res agitur, mistio scil. compressio, attritio, solutio, atque similia: ejusdem causæ effectus idem, licet organis diversis absolvatur. Vomitu itaque citò perficitur, quod lentis vicibus consequi nitebatur, sed incassum, natura.

41. Alvus constricta, segnis, et solitariae vitæ affueta comes, haud nascitur sæpius quàm à de-

ficiente mucō intestinali, et liquoris gastrici, glandularum et vasorum [§ 40.] sobolis absentia. Hic enim molles fluidasque fæces reddere debet; ille verò lapsum facilem iis conciliare. Causa defectûs eadem, ac supra [§ 40.] memorata, et levamen eâdem medelâ, adscito motûs et exercitationis auxilio, tentandum. Ab hoc solo fonte semper enasci malum non asseritur; at verò si ab alio quocunque semel fuerit inceptum, augmentum exinde capit, et alvus segnis tandem astricta devenit. Fæces quidem educunt *κάρω* purgantia blanda, præsens auferunt incommodum, molestias istiusmodi statûs plerumque consortes leniunt. Si verò remediis, quæ tam pulchra præ se ferunt, nimis indulgeat æger, quoties alvus obstipata reducit ærumnas, secutura nocumenta vix evitabit. Talia sunt, alvus adhuc astrictior, humiditate omni cum fæcibus eductâ, et viscerum oppilationes, infarctiones à crasso relicto. Duplici itaque de causa [§ 34, 40.] sese commendat emesis, hominibus istis, qui vitâ fruuntur inertī; quatenus scilicet et expellit cruda, et viscidos attenuat liquores, accelerando motum, et proinde humectantis optimi vice fungendo.

42. Ventriculum et intestina gravat nonnunquam vitium priori oppositum; scilicet aquosæ laticis diluvium, quo submersa ilia fatiscunt, calorem amittunt, et instrumenta muneri vitâli dicata huic obeundo imparia fiunt. Gravitās et languor circa præcordia; sputatio frequens; edendi cupido perexigua; aquosæ colluvici ejectionis

tio per os, mane præfertim infeſta; nauſea gravis brevi definens; fedes liquidæ, crebræ, doloris expertes, unâ cum corporis univerſi debilitate, inertia, atque pallore hanc indicant illuviem, ſimulque ſeroſam ſolutamque ſanguinis indolem. Memorata ſymptomata correctionem haud obſcurè innuunt. Expreſſio liquidi redundantis, et robur additum canaliculis primò neceſſaria ſunt, tum ſecutura inde compacta ſanguinis craſis, et mutata diatheſis pituitoſa: his imprimis conferunt emetica. Hinc itaque patet cur ventrem ſolutum vomitus comprimât, compreſſum ſolvat, juxta Hippocratis placitum (*a*), Celſo repetitum, ratumque.

43. Pancreatis ſtructure et munus, ſalivalium glandularum æmula, illud objiciunt ſimilibus malis, ſecretioni nempe impeditæ, vel nimix. Utrique prodeſt emeticum; obſtructionem quippe, ſi non nimis pertinax ſit, reſerat, exuberantem laticem potenter emungendo exſiccât.

44. Inferiùs paulò, ab oſculis lacteorum exſuguntur liquefacta ingeſta, quæ ſtatim ad glandulas meſeraicas feruntur. Tardus iſtorum motus, et vaſcula tam exilia et tortuoſa tenuiorum à craſſis ſeparationem promovent, dum difficile reddunt chyli ad ſanguinem iter; illis præcipuè qui debili ſtamine potiuntur, pravisque ſimul veſcuntur eſcis; vel quibus harum partium ſtructure mala contingit. Imprudens ætas, temperies ſequiæ, et victûs crudioris maleſuada fames,

(*a*) Celſi medicina, lib. i. cap. 3.

pueritiam, præ aliis vitæ stadiis, morbis ex infarctis et tumefactis glandulis meseraicis opportunam reddunt. Causæ similes in adultis similes edunt morbos, sed rariores; nam reipsâ constat puerulis hujusmodi infarctiones, glandulas abdominales occupantes, frequentiores devenire. Istitis enim annis vix nobis occurrunt epulæ gratiores, quàm fructus crudi, immaturi, legumina et farinacea viscida, et, si magis indissolubiles pariat natura cibos, istis utimur imprimis, eos importunè petimus, eventûs luxuriosæ gulæ nullâ factâ ratione. Inde massa tenax in alvo formatur, quæ in fluorem viscidum, vix nisi formâ mutatum, tandem resolvitur, dilabitur è stomacho, occurrit bilij inertis, eâ diluitur, vix tamen solvitur: tenuior pars abit in lactea, brevi præ tenacitate hæsurâ; quotidie renovatur causa, crescit augeaturque obstructio, durior exadit tumor, vicina comprimit, aditum in venas claudit, atrophia nascitur, et homunculus indies marcescit. Vel, si ad tantam sævitiem morbus non attigerit, nec penitus obturentur glandulæ, imperfectus chylus sanguini affunditur, eumque labe contaminat; secreta, cruoris proles, vitiantur, affectis ubique ferè glandulis; eisque præcipuè tumefactis, quæ collum faciemque obsident: unde vultus fit præ-tumidus, torvus, et veram strumam, aut diathesin eò vergentem, adesse designat. Tetrica certe rerum facies hæc, et medenti nodus intortus; suum enim robur perdidere solida, justo viscidius fluida coguntur: hinc depravantur, et quæ assumptorum mutationem in corporis naturam ut plurimum

plurimum debebant perficere, eam imperfectam relinquunt. Præterea, glandulis obturatis, præcluditur ipse meatus, per quem novas vires ad sanguinem mitti oportebat. Huc adde quòd semel oppilatæ glandularum cryptæ difficiliùs purgentur, et muneri suo minus aptæ reddantur: unde facile constat, ad morbum adeò pervicacem debellandum omni subsidii genere utendum esse. Tumorum resolutio imprimis tentanda, ut vitæ pabulum, depravatis medela, robur debilibus, quantum victu et remediis fieri possit, subministrantur. Deinde partium, in quibus mali sedes, ita firmanda crasis, ut gravantia liquida subigant, expellant; curatâ interim vivendi normâ. Qui situm mesenterii callet, intelligit facile, quantâ cum violentiâ, nisu vomitûs, illud undequaque prematur; et quinam inde futuri sint effectus in glandulas recens infarctas; in vicina cœdâ spurcitiæ cumulata [§ 39.] in pancreas eâdem scatens [§ 43.] in ventriculum denique, sursum evocando liquores acres [§ 34.] hunc infestantes, et novas subinde vires morbo supeditantes. Sedulò autem perquirendum erit, si integra sint viscera, si nullo ulcere corrupta, si à labe putrescente penitus immunia; sin minus, imprudens emesis hominem lædet. Idem quoque verum est, si ex sola laxitate continui solutio metuatur: tunc enim virtus mechanica parciùs adhibenda est. Nil ferè aliud prohibet, nec magni fructûs spes erit inanis, dummodo mobilis sit obstipans

stipans materies, et repêta vomitoria commodè ferant ægri vires.

45. Inter cætera abdominalia splen viscus est tenerrimâ compage donatum, cujus columnæ carneæ, musculosæ, ad fluxilem firmandam fabricam, plus quàm ad insignem cruoris quam accipit copiam propellendam, aptatæ videntur; nec labori par est arteriæ robur, aut cordis impetus, per vasorum numerum, et anfractus tortuosus, retusus. His verò succurrit assidua et lenis agitatio, quam connexio splenis cum diaphragmate, muscutorum abdominalium propinquitas, positio pendula, isti conciliant. Atque per has causas præcipuè sanguinis progressum per vasa lienalia conservari censendum est. Ideoque si motus assuetus sistatur, vel diu minuatur, (ut in eis fit, qui vitâ utuntur deside, et domi peractâ) cunctatur in cellulis cryptisque sanguis, evadit crassior, et maximo cum obstructionis periculo res agitur; quum debita mobilitas, et impetus assuetus, facilis liberique transfluxûs auctores, cessant. Diversa morbi ætas, causa diversa varium postulant lenimen; nec una medendi ratio lienosis omnibus convenit. Si recens infarctio, nec ingens durities; si ab exercitationibus omissis, et ex acriore abhibitâ rei cuicunque curâ nascatur; si gravedo distensione dolens, nec copiosa materies, atque temperies *εὐφορος* quoad cætera, compressio mochlica cum fructu potest adhiberi. Si verò durities schirrum indicet tactu, aut si prægressa febris inflammatum lienem in  
puris

puris facculum converterit, ad alia fugiendum remedia, ne schirrus irritatus in cancrum abeat; vel perruptis claustris, quibus pus coercetur, purulento diluvio submergatur abdomen, aut sordidâ tabe obruatur hepar.

46. Inter morbos, qui jecori infensi sunt, fœda ista, et luteo colore cutim inficiens aurigo, fæpissime sensibus se prodit. Causas hujus mali proximas in scriptis medicis plurimas invenimus; singulas autem enarrandi vel discutiendi laborem mihi minuit elegantis illius exercitationis auctor, qui de ictero tractatulum *Tentaminum Med. vol. 1 mo (a)* inseruit. Cæterùm cum egregio viro, qui nomen suum latere voluit, censere licet, longè frequentissimas icteri causas calculos esse, in vesicâ felleâ fatos, per meatum tortilem ex eâ derivatos, et limine nimis angusto hærentes. Nam præter historias, quas ipse auctor adducit, ratiocinia ejus plurimum stabilire videtur alia, *(b)* quæ volumine sequente traditur. Si itaque hæc sit vera rerum facies, (ut maxime verosimile videtur) cæteris remediis mechanica sunt anteferenda; ambulatio, equitatio, aliique motus quibus fortiter jactatur corpus, in hunc censum vocantur, ut eorum ope lapillus ab angustiis extrudatur, et bilis repressa effundatur. Descensum sanè egregiè promovent auxilia recensita; sed deficiunt nonnunquam, et duriori cuneo morbus indiget. Si unquam profit emeti-

*(a)* Medical Essays, &c. Vol. 1. Article 33.

*(b)* Idem, Vol. 2. Article 28.

cum virtute quâvis mechanicâ; unquamve sperandi effectus hujus salubres; et morbi sedes, et causæ genius, hîc mentem fructûs spe lactant, nec sæpe inani. Hauſto enim copioſè liquore, turgidulus fotu tepefacto faccus, ipſi ferè ductui conſtricto apponitur, eumque laxat; dum urget à tergo bilis, ingenti contractione [§ 36.] protrufa. Aut ſi cauſas alibi ponamus, v. g. in porro biliario, in primo ejus exortu à portarum extremis, aut ubivis præterea, eaſque materiem craſſam, purulentam, vel hærentes lapillulos agnoſcimus; haud minimæ efficacix erit emeticum, ſi artis adjumento malum debellari poſſit.

47. Per ſympathiam, ob commune nervorum conſortium inter ventriculum atque renes, perque motus turbasque in illo concitatos, quotieſcunque hi dolore afficiuntur, viam indigitâſſe videtur dux natura, quâ ſedibus excutiatur quicquid inimicum foret renibus diuturniore morâ. *imo*, Gypſea, mucoſa, purulenta materies hîc nata, vel per metaſtaſin aliunde huc provecta, craſſior quàm quæ per exiles canalium fines exire poſſit, vel egreſſa diutius quàm fas eſt in ſinu renali ſtabulans, augmentum quotidie capit, mole creſcit, vicina premit, vel atterit, et cruciatûs atrociffimi exiſtit auctor. Sæpe formatus jam calculus caſu in ureterem, hoſpiti tanto recipiendo nimis anguſtum, protruditur; cujus tunicæ muſculoſæ, ſenſiles, ſcabrà lapilli ſuperficie raſæ, arctiùs hunc complectuntur, et ulteriori progreſſui fortiùs obſtant, ſævientibus interim doloribus omnem fere tolerantiam ſuperantibus. V. S. imprimis



primis celebratâ, universalibus et topicis stric-  
tura tollenda est; deinde vis mochlica præstat  
quod arte præstandum. Nec unica hæc est vo-  
mitorii virtus in hoc morbo, sed fomenti vicem  
gerit epotus liquor, qui cum injecto clysmate  
balneum internum faciunt, quod aquoso suo ha-  
litu relaxat contracturas, et, ventris infimi con-  
tenta adaugendo, in renes aut ureteres vim ma-  
gis intendit.

2do, Morbosa renum flacciditas, infracto va-  
forum robore, tale nonnunquam emitti patitur  
aquosi laticis profluvium, ut speciem istius morbi  
simulet, qui Διαβήτης Græcis appellatur. Exit  
crebrò urinæ aquosæ, tenuis, decoloratæ, odoris  
saporisque pene expertis, copia spectabilis; sitis  
adeft molesta, virium prostratio, fluidorum in-  
gens dispendium, et solidorum detritio. Pejor  
morbi species ea est, in qua fit effluxus liquoris  
albicantis, chylosi, subdulcis, reliquisque stipata  
signis, quæ propria huic morbo dedit praxis ve-  
tustior, et comprobatur hodierna. Licet enim  
morbus rarissimus, cernitur tamen aliquando.  
Sive jam natus sit à relaxatis renum vasis, sive à  
fluidorum dissoluta crasi, sive ex alia quacunque  
προφάσει, uti loquitur (a) Sydenhamus, “ Cura-  
“ tivæ indicationes, ad sanguinem corroboran-  
“ dum, invigorandum, ac pariter ad fluxum  
“ urinæ præternaturalem restringendum omnino  
“ dirigendæ sunt;” cui addere licet, ad morbo-  
sam renum laxitatem auferendam.

(a) Sydenhami Epist. Resp. oper. p. 272.

Quæ de virtute emetici exsiccante supra [§ 42.] dicta sunt satis evincunt; quantum prioribus indicationibus hæc respondeant. Renum fitus; ossibusque duris vicinitas, quid mochlicè impatiantur ostendunt, et quam fortiter impetus humidum redundans ex ipsa renum substantiâ emungat. Sanè excutit, quodammodo macerantem lympham, et amissum tonum fibræ elatere suo privatis restituit.

48. Vix opus est monuisse, quam immaniter uterum farcinâ tumentem comprimant musculi [§ 36.] spasmo validissimo contracti. Proprius igitur instante partûs exclusione, sedulo fugienda sunt quæcunque istis calcar addunt. Sed eandem ob causam videre est, quanta spes ab eodem fonte profluat, si parturienti deficiant vires et repetito conamine eousque robur prostrernatur; ut quamvis situ legitimo potiatur infans, nec justam molem multò exsuperet, nec adeò arctetur exitus, quin par operi potentia partum produceret, emeticum, quod promptè, quod potentè agat, quod citò coercendum, faustè sæpe rem peragit; nec tumultus, calores, aut incendia febrilia parit, quæ comites atque sequaces sibi adsciscunt aromata, et præsertim ardentis spiritus istis acuminati, et ejusmodi plura, quæ ab aniculis, suo more, in magnum plerumque ægræ incommodum affatim porriguntur.

Alii sunt uteri affectus, qui levamen ab eodem remedio capiunt: quum verò, licet ultimas sedes in hoc viscere posuerint, vitia tamen per totum corpus dispergunt, hæ tanquam effectus generalis causæ

causæ spectandæ. Fomes itaque in universo habitu delendus, priusquam utero redierit pristina salus. Quantum huic intentioni arrideat emeticum, postea dicendum.

Perspectis hoc pacto singulatim præcipuorum viscerum culpis, saltem quæ à remediis mochlicis commoda accipiunt, effectus qui totum corpus respiciunt perpendendi, et mutationes indagandæ, operationis tantæ progenies.

49. Præter insignes vasorum truncos, qui ventrem pervadunt, qui ad organa diversa sanguinem deportant, qui ab extremis referunt, quique in unum collecti portarum stirpem constituunt; milleni istorum furculi viscera perreptant, et variis ambagibus iter tentantes, plures formososque vasorum plexus constituunt; per quos assiduò propelluntur humores inquilini. Per vomitum vasorum situs, magnitudo et figura omni momento variantur, ita ut actio nata sit pulmonum actioni simillima. Si verò numerum vasorum abdominalium, et vim quæ eis eorumque contentis nisu vomitorio applicatur, in censum revoces, pulmonum vires, et actiones maxime potentes longè superari videas. Adde quòd hoc ipso temporis puncto, strenuius multo ab iis res geratur quàm solito more fit. Inferre itaque nil vetat uniuscujusque munus sanguificandi summo perè exinde provehi; id est, compactio, densatio, attritio, solutio, miscela cruori eximiè conciliantur. His quoque famulatur aucta sanguinis velocitas; comprimuntur enim arteriæ, et

quæ

quæ per ventrem vadunt; quæque etiam per artus dispartuntur. Musculi enim plerique leviori tetano, dum nifus instat, horrescunt, ut cuius patebit hominem evomentem spectanti. Musculi, qui pectus humerosque ambiunt, sustentant costas figuntque; exporrecta brachia suffulciunt corpus, quibus opitulatur illi musculi qui dorsum vestiunt, antrorsum curvatam spinam in situ commodissimo detinendo; crura rigescunt, et instar immobilis statuæ æger ore hiante vomitûs insultum exspectat. Vasâ itaque sanguifera musculorum comites, æquè ac abdominalia, pressuræ subjiciuntur, et eadem pati debent: minuuntur arteriarum diametri; ruit ergo compressum fluidum quò patet exitus; recessum prohibet urgens ejusdem à tergo columna; progredi necesse est, ocyùs itaque venas appetit: harum tunicæ minus rigidæ faciliùs vi cedunt externæ; idem itaque his accidit, comprimitur nempe pel-liturque sanguis; valvulæ frequentes pedem revocare vetant, pergit ergo celeriùs et pleniori fluvio ad cor accedit; inde crebrò repetitis ictibus perculsus, properè cursus iterat eisdem. Prædicta docent, nec obscurè; 1<sup>mo</sup>, Hæmatopoesin emendari. 2<sup>do</sup>, Secretiones augeri. 3<sup>tio</sup>, Solida novis viribus instaurari. 4<sup>to</sup>, Denique sanguinis momentum intendi, et sepositis impedimentis circulo liberiori frui. Atque ex hisce principiis facilè patebit, quinam sint morbi τῆς μοχλείας δέομενοι, et quare tot tantaque, tum in fluida, tum in solida, efficiat vomitorium: in

paucis tamen ejufmodi morbis horum ufus perfringere haud à propofito alienum erit.

50. Præteritâ jam hyeme; folida, acri gelu priùs rigefcentia; laxantur iterum; atque fluida, ab enervatis vafis minore impetu propulfa, verno tepore fpiiffefcunt; et levi de caufâ in extremis vafculis fiftuntur, deficientè quoque confuetò folidorum robore; aëris humiditas fordes accumulat, et corpus debile, fæcibus gravatum; multis malis oportünum reddit. Inducit fortaffe natura febrem benignam intermittentem, quæ moleftum onus brevi excuteret, fanum vegetumque corpus daret; fi fibi commiffa ab opere non deturbaretur. Urget tamen querulus æger; dictis amaris medicum laceffit, et fpreto confilio; fortè ab aniculis intempeftivum morbi levamen, mil-lenis fæpiùs malis ftipatum; fibi comparat. Emeticum fecundat naturæ aufus; et, fi radicitùs haud extirpèt, tutam tamen expedit in fanitatem viam [§ 32.] etiam fæpiùs repetitum prodeft. Febris intermittens autumnalis emetici fubfidium haud minùs efflagitare videtur, tum ad amurcas ex primis viis exhauriendas, tum ad vitia, quorum radices altiùs hærent; corrigenda.

51. Febris lenta, continua, morbo priori affinis; gradu major, ab eisdem fortè caufis, idem circa tempus, quandoque graffatur; immobilior videtur materies, quæque diuturno naturæ labore nullo modo subigi vel expelli poffit: hinc nulla remiffio; parum tamen mordax eft, ergo haud impetu magno exardet. V. S. cum fanguine emittit vires, quæ in hâc febris fpecie fatifcunt

nimis; alvi subductio, si lenis, parum confert, si fortius res agatur, debilitat. Naturæ inceptis favere medici est; feбри ergo flammæ subjiciendæ, ut irritos conatus absolvat, crassa subigat, et expellat subacta quò nocitura non sunt. “ At si  
 “ frigus est et torpor, inquit Celsus (a), et jac-  
 “ tatio corporis; non alienum est, in ipsâ febre,  
 “ dare mulsi tres aut quatuor cyathos, vel cum  
 “ cibo vinum benè dilutum. Intenditur enim  
 “ sæpè ex eo febris, et major ortus calor simul  
 “ et priora mala tollit, et spem remissionis,  
 “ inque eâ curationis, ostendit.” Nec quidem  
 minora ab emeticis efficiuntur. Adest nempe  
 vis insignis spirituum motum accelerans [§ 18,  
 19.] evacuatur sordes in ventre latentes [§ 30.]  
 viscida subiguntur, si quæ abdominis incolas ob-  
 sident [§ 39.] denique sanguinis intenditur cur-  
 sus, et augentur secretiones [§ 49, n. 2, 3, 4.] te-  
 nues, per exteriora præsertim.

Neque ulla fortasse est methodus efficacior vel  
 utilior, quâ sudor elici potest, quàm post exhi-  
 bitum vomitorium; non modò enim in ipsâ ope-  
 ratione copiosus plerumque exprimitur, sed ex-  
 teriora versus tam validè trudentur liquida atte-  
 nuata [§ 49.] ut dimotis obstaculis, quæ officia  
 cutanea claudunt, effluent pleno rivo humores  
 istuc determinati. Atque huc egregiè confert  
 opiatum, quod post emeticum dari optimo con-  
 silio suadent practici. Vomitorium præterea evo-  
 cat squallorem primas vias scedantem, et præca-

(a) Celsi Medicina, lib. 3. cap. 5.

vet ne exhibito hydrotico, eoque difperfo per corpus fomite; manus hoftiles in viscera converrantur.

§2. Eadem doctrina innuit quanti fit ufûs emeticum in tenui acrique catarrho, in afthmate humorali, aliisque ejufmodi morbis à frigore correpto natis; quum fciz. retenta materies perfpiranda, vafa eoufque inertii fluido replet, ut functiones omnes pœnas luan; quum gravitate pigrâ fensus hebefcant, et ad ftateram ferè corporis pondus auctum effe dices; diftenfa denique vafa doleant, partesque fenfiles ægrè laceffantur. Cum hæc et alia ejufmodi fymptomata fe produnt, remedium exhibendum eft, quod portas referare, liquores fuperfluos expellere, atque folitam agendi facilitatem corpori reftituere poffit. Haud parùm his confert emefis; et quâcunquè corporis parte ægritudo fuas fedes pofuèrit his caufis orta, multùm valere poffit. Ponamus glandulas, cæteraque vafa circa fauces et collum, tantâ fcattere aquarum copiâ, ut defluxionem brevi adfore indicent figna, vis mochlica fæpe falutaris eft. Rubens etenim tumensque facies, oculi fcintillantes lachrymis fuffufi, liquore fuo madefacti nares, et falivæ mucique rivulum fundentes oris fauciumque lacunæ glandulofæ, conatûs emetici nunquam non comites, liquidò demonftrant quantâ cum vi appetat has oras fanguis, et quantus in vafcula obftipata impetus fit: dum canales offei cedere nefcii, et infignes vertebralium et carotidum internarum arcus et afcenfûs obliquitas cruoris ad ce-

rebrī appulsum valdè retundunt: fluxilis ergo hujus compages minus periclitatur, impetu ut plurimùm extrorsum determinato; parùm tamen introrsum vis aucta devenit. Et partim fortè hinc, partim à virtute stimulantè et evacuante, ratio patebit cur in vèrtiginè, hemicraniâ aliisque similibus, vomitus tanti sit usûs; cur in epilepsiâ quandoque in senibus adèd profuerit, ut fatentur observatorum scripta; “Inveteratam epilep-  
 “siam, quæ etiàm per xx annos ægrum traxit,  
 “curatam novi, inquit Hoffmannus (a), ab  
 “emetiçorum usu et specificis antiepilepticis ex  
 “animali regno petitis.” Nèc mihi desunt historix similes, at referre prohibent limites præscripti.

53. Impedit eadem ratio, quò minùs horum usus in variolis distinctè enarretur; non modò quatenus evacuant, et avertunt aliòqui futura mala [§ 30.] sed ob aliòs etiàm quibus potiuntur effectus [§ 49.] et eximias inde manantes mutationes. Pustulis refertam esse cutim ponamus, vascula perspiratoria ita compressa ut coactam materiem vis solita nequeat protrudere: hoc in casu contentorum moles augetur; calor febrilis ita ad interiora exæstuat, ut organa intus exhalantia adèd arefacta, vel aliòquin obstipata evadant, ut suum munus exsequi non possint. Ex utrâque parte cohibetur idcirco fluidum, quod diuturnum nimis circuitum jam patitur, quodque longiore morâ pessima mala pariturum est.

(a) Hoffmanni dissertat. Decad. 1. p. 204.



Calor enim nimius acrimoniam gignit, unde ftimulus partibus nervosis: hinc iterum febrilis æstus fitisque, fortasse delirium, huic supervenit; ab auctâ fluidorum mole anxietas præcordia infestat: quum interim calore crassiora deveniunt fluida, coagulantur, et inepta magis redduntur ad exitum sibi aperiendum per ea loca quæ sæpè indigitat natura, sciz. per fauces vel intestina. Exigunt hæc mala coagulati in vasis exhalantibus utriusque loci resolutionem, evacuationem, reliquisque conciliatam fluiditatem, nec auctâ interim febre plusquam per lene opiatum tutò coerceri queat. Qui prædicta [§ 13, 18, 39, 49.] de emeticorum effectibus, tum in fluida, tum in solida, in mentem revocaverit, hæc non inepta esse auxilia, imò aptissima forsan prædicabit. De febribus acutis agens Sydenhamus hæc profert. (a) “ Sæpe miratus sum, inquit, dum  
 “ fortè materiem vomitu rejectam aliquando  
 “ curiosè contemplabar, eamque neque mole  
 “ valdè spectabilem, nec pravis qualitatibus insignem, quî factum fuerit, ut ægri tantum levaminis exinde senserint; nempe vomitu peracto sæva illa symptomata (nausea v. g. anxietas, jactationes, suspiria luctuosa, linguæ nigredo, &c.) quæ et ipsos excruciarant, et adstantes perterrefacerent, mitigari solent ac solvi, quodque morbi reliquum est *εὐδύμωσ* tolerari.” Quum verò ex antea dictis pateat, fluida crassa solvi, canales obturatos reddi tran-

(a) Sydenhami Op. sect. 1. cap. 4.

biles, totum corpus arefactum humectari, simulque nociva expelli, mirandum non est levamen tam subitum inde evenire.

54. Beneficiis sic cursim enarratis, quæ ab emeticis luçantur morbi acutiores, via sternitur ad alios, in quibus occasio minùs præceps, nec adeò fallax experientia, licet iudicium satis difficile. Vomitoria certè isti morborum cohorti præcipuè adversari videntur, qui vel in ipso ventriculo, vel in visceribus propè litis ortum sedemque obtinent, et hujusmodi omnes ferè morbi chronici sunt. Vitia enim hinc nata longè latèque brevi dispersiuntur, iterumque effectus temeratae salutis ad hæc loca revertuntur. Hoc nullibi clariùs conspicitur, quàm in eis morbis, qui cum mentis alienatione junguntur, quique à pravo victu, vel in eo assumendo errore, ut à causâ proximâ eveniunt. Licet enim ab animi pathematibus, ab evacuationibus, aliisve causis remotioribus enascantur, victus tamen inepta ratio sæpè constituit propiorem. Innumeri nervorum furculi ad ventriculum emissi, neque ad ipsius nutritionem, neque ad motum quemlibet provehendum tantummodò comparati sunt, sed potiùs ad chylificandi operam adjuvandam. Dispersis itaque nimiâ copiâ spiritibus, perditur ex causis sanitatis una; assuetæ scil. ciborum mensuræ, in nostri naturam mutandæ, imparia deveniunt instrumenta: assueta tamen mensura assumitur, et dum cætera æqualia non sunt, necessariò enascitur indigestio, et inde alia mala. Hæc origo sæpissimè est affectionis hypochondriacæ,

riacæ, et reliquorum quandoque graduum mentis læfæ, à vacillatione leviffimâ ad fummam ufque infaniam. Docent phænomena hujus morbi in fluidis præ primis hæere culpam, hancque effe nimiam craffitiem, five partium mobiliffimarum difflationem: hæ funt fpiritus animales, halitus cruoris vaporofi, et aquea dein ejus elementa, quorum minus majufve difpendium morbum efficit leniorem vel graviorem, dum fanguis per varios fpiiffitudinis gradus tranfit, donec in veram bilem, à veteribus atram dictam, degeneret. Quodcunque de hujus morbi naturâ cognitum habemus, præceptis chemicis ut plurimum acceptum referendum eft, quorum ope hîc, uti etiam in aliis benè multis, plurima phænomena, alioquin abdita prorfus, deteguntur. Ex chemicâ fanguinis ànalyfi conftat, difflatis aquofis fupereffe falina, oleofa, terreftria, diverfimodè conjuncta, fanitatis muneribus parùm apta, utpote quæ craffiora et leviora fanguine fano. Eadem etiam chemia fidis experimentis demonftrat, oleum, falem, terramque unita, plus æëris in fe continere, quàm aquam reliquis conjunctam. Hujus teftis fit calculus humanus. Ergo folida præpollent fluidis, ocyus hæc circumaguntur, et augetur tenuioris difpendium, dum craffefcens refiduum intimam cum diluentibus admiffionem refpuit. Ingefta haud fatis fubafta morbo addunt, vifcera molliora obftipant, actionem minuunt tolluntve: hincque fplenis, hepatis, hypochondriorum oppilationes, tumores,

dolores. Sanatio requirit viscido restitutionem fluoris et miscibilitatis. Hæc fiunt per diluentia, saponacea et attritum. Diluentia sola parùm valere ostendit exposita morbi natura: sola saponacea, efficaciora licet, rarò sufficiunt; adjuvantibus verò attritu et calore omnem quam possident vim exerunt, docente chemiâ. Denique attritus in hoc morbo rarò per stimulantia vulgaria intenditur, quin hæc sæpè nociva comperta sint. Inde quidem augetur sanguinis celeritas, sed simul augetur ejusdem rarefactio. Compertum autem est attritum esse in ratione celeritatis, soliditatis, et compressionis. Si itaque auctæ rarefactionis ratio superet rationem auctæ celeritatis, inde non modò non augebitur attritus, sed, è contrario, minuetur. Postulatur itaque remedium quod sanguinis celeritatem intendat, rareficientiam cohibeat. Tale, in nifu vomitûs, reperiri, facilè ex prægressis liquet. Hinc obiter patet utilitas submersionis in aquâ frigidâ.

55. Huic morbo ex diametro opponi videtur hydrops, in quo lymphæ serosa viscera submergit, et pallescens sanguis corpus deturpat ingrato colore, docetque aquam exuberare, et vitio diverso, oleum, terram, salemque deficere.

Dispositione pituitosâ in fluidis subortâ (quæ à multiplici causâ fit, quarum aliquas haud inconcinnè memorat Poeta (a),

(a) Sammonicus.

*Corrupti*

*Corrupti jecoris vitio vel splenis, acerbus  
Crescit hydrops: aut cum siccata febre medullæ  
Atque avidæ fauces gelidum traxêre liquorem:  
Tum lymphæ intercus vitio glifcente tumefcit,  
Secernens miseram proprio de viscere pellem.)*

statim ita debilitantur solida, ut torpidos liquores vix propellere possint. Hinc stagnatio in lateralibus vasis, et functionum languor. Indies accumulatur serum, turget, propinqua lædit, et perpetuò renovantur morbi causæ. Si contingat hæc in unico vase, hydatis formatur; si κατὰ φλέβας, seu per tunicam cellularem per omne corpus dispersam, fit leucophlegmatia; si ruptum vas effundat contenta in cavum quodcunque, localis hydrops suboritur: si denique (quod sæpissimè in causâ est) actio venarum absorbentium debilitetur, sive ab obstructione in eis natâ, sive à mero languore et inertia solidorum; dum suo munere funguntur arteriolæ inhiantes, et squallentem laticem sine fine in cavitatem eructant: hîc continuò accumulatus spiffescit, vasa omnigena brevi effœta reddit, et hydropem topicum producit. In hoc morbo curando primaria morbi causa minuenda vel adimenda est; attenuantia, evacuantia, exsiccantia, roborantia uniuscujusque ordinis usurpanda; ut tandem amoveatur onus humidum, minuatur latex, et vasa eòusque viribus instaurentur, ut officio debito fungantur, et fluidorum nativa bonitas redintegretur. Hisce omnibus absolvendis dicata plurima apud practicos remedia invenimus. Nescio quot specifica celebria ab iis recenseantur, quæ

quæ uno ferè ictu morbum profligent, si fides eorum promissis sit habenda. Displicet aliis hæc curta supellex, et in vitium incidunt contrarium; pomposam memorant farraginem, et remediorum cumulo obruunt ægrum. Utraque praxis evitanda, neque solis emeticis curatio committenda, nec sine his tentanda; cùm longiores adimant labores, et compendio quasi rem gerant, quæ pluribus adminiculis cæteroquin indiget, Remedia antihydrica, priùs memorata, suum opus absolvere videntur, motum et attritum fluidorum ciendo, pellendo, difflando exuberantem lympham. His omnibus simul conducit nifus emeticus fortis, sæpiùs repetitus; crassa quippe comminuit, obstructa referat, propellit stagnantia, humida exsiccat, secretiones aquosas auget, solutum sanguinem compingit, resolvit viscidum, celeriorẽ ad extrema facit appulsum, movetque sudores. Adde quòd ingentem in tumefactum abdomen vim exerit, et quum in hoc tantummodò sedem habet morbus, nec quopiam viscere pessundato, nec in corpore valdè senili, et recens sit, repetitis emeticis, benè institutâ diætâ, et exercitatione modicâ, res tutò expeditur, nisi in iis sit, (a) “ quibus inutilis libertas est, nec “ tam facilè coguntur ac ii, qui servitutis beneficio convalescunt.” In hydropis etiam proVectiori gradu haud parùm conferre visa est emesis. Idem comprobatur historia apud Forestum (b)

(a) Celsi medicina, lib. iii. cap. 21.

(b) Observ. lib. xix. obs. 33.

recitata de quodam hydropico, qui “ inflatus  
 “ ventre, manibus, pedibusque et facie, à me-  
 “ dicis destitutus, et tanquam desperatus, adiit  
 “ littus marinum, et naviculam per aliquot mi-  
 “ liaria ascendit in altum maris, et provocato  
 “ vomitu, post vomitum exercitio utens, fani-  
 “ tati restitutus est.” Huc afferre licuerat Sy-  
 denhami suffragium, quod in tractatu suo ele-  
 ganti de hydropre crebrò fert, et sententiam de  
 horum commodo plurimis exemplis iteratâ ob-  
 servatione ratis, suffulcit; at disertâ ejus verba  
 in arte seniores probè callent, ad ipsum libellum  
 juniores lubenter amandantur, cujus evolutio,

----- *si propius stes*

*Te capiet magis; ----- et*

----- *decies repetita placebit.*

Hoc tamen in morbo haud mochlicis pugna  
 committenda est, nisi viscera aliaque ita se ha-  
 beant, ut antea [§ 44.] observatum.

56. Ex enarratis haectenus liquidò patebit, in  
 morbis plerisque à colluvie serosâ natis, quænam  
 ab emeticis expectanda sint. Patebit quoque  
 horum usus in morbo qui puerulis utriusque  
 sexûs infensus, gravis nec infrequens, rachitide  
 scilicet; qui à vitiis in abdomine natis, ad me-  
 dullam usque dispersis sæpiùs productus, ipsa  
 corporis fulcimenta pedetentim suffodit, et duris-  
 sima ossa, inflexibilia ferè, nimis facilè flectenda  
 reddit. Mali ortus et progressus, curatoria in-  
 dicata, nec non ratio, quâ huic morbo vomito-  
 riis

riis iteratis occurri possit, ex sequentibus clariùs cernuntur (a).

1mo, Offa, quæ in toto corpore jam solidissima sunt, olim gelatinæ fluxiles, membranæ, cartilaginee fuere, quæ paulatim durescentes, per diversos soliditatis gradus, ossa tandem fiunt rigida.

2do, Hujus indurationis causa duplex existit, materiæ scil. ossificæ à sanguine secretio, et secretæ appositio firma, sive compressio particularum ad se invicem fortis. Hæc effecta sunt virium vitæ integrarum, et musculorum vicinorum incumbentium. Ideoque

3tio, Si sanguis particulis ossium structuræ idoneis minus dives sit, secretio minor erit, et muneri suo ineptior. Porro, si absit actio musculosa, et vires langueant, altera causa ossificationis abest. Hinc itaque

4to, Liqueat istas condiciones, quæ rachitidem parere possint, omnes ejusmodi esse quæ chylopoiesin et hæmatopoiesin depravare solent. His ergo imprimis erit prospiciendum, et medicina id genus eligenda, quæ et vitium in ipsis officinis diversimodè corrigat [§ 18, 27, 39.] auferat, nocivos ejus effectus, in aliis locis pullulantes, emendet, atque impetûs motûsque formantis defectui optimè subvenire possit [§ 49.] Viscerum quidem saburram feliciter educunt purgantia: sed si fortiora fuerint, aut nimis sæpè repetita,

(a) Vid. Alex. Monro's Anatomy of human Bones, p. 34, &c.



vires profternunt admodum, craffiora relinquunt, fed vapida, et obftructionibus creandis magis opportuna; et debilia jam facta folida adhuc debilitant. Emetica validè expurgant viscera, nec vitæ viribus adeò funefta, folida corroborant; imprimis fi victus accuratus inftituatur, fi corpus in frigidam sæpè immergatur, fi denique fpecificis leniantur fubinde nata fymptomata.

57. An in arthritidis infultibus utilis fit vomitus necne, quibus, quando et quoties exhibendus, definire haud leve eft. Illi, quorum auctoritas mecum præ plurium valet, in paroxyfmis omninò ejus ufum dehortantur, nifi urgeant nauſea, vomitus, aliaque ventriculi forde ſcatentis figna; et tunc lenia tantummodo admittunt. Alii (a) verò haud infimi ſubfellii medici ſtant contra; urgetque unus (b) ſe obſervâſſe “ in-  
“ ſultus arthriticos conſuetos, perpetuò ferè mi-  
“ tiores, quando ſtatim inter initia leni emetico,  
“ vel ſolo, vel cum laxante mixto, prima regio  
“ à ſordibus evacuata fuerit.” Qui valet, has lites dirimat: ego, iis miſſis factis, emeticorum ufum in alio ejufdem morbi ſtadio demonſtrare paucis conabor; id eſt, inter paroxyſmos, ad futuros avertendos. Acris illa materies, in anguſtiis hærens, et dolores cruciantes excitans, poſt exacerbationem podagricam (ſi rectè res geratur, nec intempeſtivo medicaminum externè vel internè applicatorum uſu ſuffocentur incepta na-

(a) See Dr. Cheyne's Eſſay upon the Gout, p. 77, &c.

(b) Hoffmanni Diſſert. Decad. 1. p. 411.

turæ) expellitur, fudor lenis locum affectum perfundens, vel, si deterius adhuc malum, et sedes habeat profundiores, erumpens tophus, insequens inde levamen, symptomatum omnium remissio, hanc evacuationem criticam fuisse designant; ideoque morbi fomitis in sanguinem, partesque nobilioribus vitæ functionibus dicatas; nequaquam metuendus erit regressus, sed quod morbi jam superest instar alius cujusque chronici sævioris abigendum. Fluida; si prava sint, mendis purganda, infirma solida roboranda; vires totius corporis instaurandæ; stirps denique atrocis mali quantum valet ars succidenda. His plurimum confert medicina gymnastica, quæ præ cæteris aliis suppetiis infracta membra novâ virtute reficit. Equitatio, vectio in rhedâ, curru, &c. sunt optima subsidia. At quoties hæc prohibet parum amica tempestas anni? Hyeme aut vere sæpissimè contingit podagræ decessus, pejus tamen adhuc si autumno intermittat. Aër enim humore gravis frigidusque foràs egredi omninò prohibet; atque intra porticus, vel domûs penetralia, pedibus insistere, aut motu quovis corpus torqueri, ægrè admittunt artus distorti, et nuperis cruciatibus claudicantes. Fricatio sanè leviter tantummodo mundat exteriora, neque evacuat è visceribus pituitam, quæ ob omissum tamdiu motum ea necessariò gravare incipit. Præterea rarò defunt ægro gratulabundi sodales, qui pignus amicitiae charius dare nesciunt, quam propriam salutem poculis evertere, hominisque ex morbo recreati exitium moliri, dum sanitatem

tem priſtinam verbis exoptant, reverà autem inſidias ſanitati ſtruunt. Ex his atque ſimilibus cauſis, emeticum ſæpè ſæpiùs perquam neceſſarium eſt convaleſcentibus, neque ex prædictis colligere arduum erit quâ ratione exercitationis etiam fortioris vice fungatur. Patet etiam quibus modis actionibus animalibus opitulentur vomitoria, crassa quomodo ſubigant, denique plus minusve ſingulis indicatis respondeant: neque verentur ex præctis ſagaces, bis in menſe, ſæpiùs quandoque, iſtiusmodi hominibus vomitum præcipere. Perſpectis itaque horum commodis in chronicis plerisque, eos morbos levi pede percurrere animus eſt, qui ſexui ſequiori tantummodo inſeſti ſunt.

58. Non modò vitæ ratio, ſed ipſum ferè vitale ſtamen ſceminis molliorem ac laxiorem temperiem dediffe videtur, niſi fors durior alienam impertita ſit, atque mens ſana, in corpore ſano laboribus improbis indurato, eis firmitudinem donaverit maſculæ vi omninò æmulam. Eſt tamen vitæ ſtadium, quo etiam hæc mulierum conditio ex errore levi peſſimis obnoxia malis evadit; eo ſcilicet quo ſexûs discrimina jam adſutura ſint, id eſt, ad vel circiter annum ætatis 15: huc uſque enim, ſenſu medico, genus unum idemque eſt. In quibus autem discrepant, quare, quæ cauſæ phyſicæ discriminis, referre non opus eſt; fuſiùs ea ab aliis tractantur. Sed brevis morborum recitatio, quum lucidiori argumentorum explicationi inſervire poſſit, propoſito haud incongruum videtur.

1mo, Adveniente molis augmenti termino, eadem organa, quæ corpori virgineo pabulum ministrârunt et incrementum, plus pèrgunt conficere quàm sola corporis nutritio jam exigat; quod superest sanguinis per vasa utérina jam pèriodicè emittitur. Si diutiùs retineatur ob deficientes vasorum vires, vel impeditum exitum, plethora plethoræ superadditur, et morbi virginei indicia citò sese produnt.

2do, Si verò aquosus, solutus vel acris sanguis uterum pervadat, et momentum absit quo dilatentur vasorum oscula, eòusque ut rubrum sanguinem deponant; is lateralia permeat, in glandulas, quæ cavum uteri ubique obsident, infunditur, crassescit; exit tandem liquor viscosus, colore diversus, nunc albus [à quo *fluor albus* appellatur] vel albicans, vix lintea tingens, flavescens, viridescens, nigricans, et omnibus affectus coloribus qui inter hos existunt; nunc sine fœtore transit, nunc graveolet; nunc mitis, ut in initio plerumque, et diutiùs vigente morbo acrior, coloratior, fœtidior evadit. Patentès glandulæ tenuiores quoscunque separant humores, et eliminant; inter quos nutritivos, qui solidis vigorem, momentum fluidis suppeditasse debebant. Hinc indies à viribus aliquid subtrahitur, perit membrorum virtus, labitur digestio, vitio magis indelebili fluida corrumpuntur, et per totum corporis œconomiam serpit labes, quâ nullâ (expertos afferentes audivi) ex toto chronicorum agmine, sexui crudelior, curatu difficilior, aut effectibus exitiosior. Nam fatiscunt imprimis instrumenta

strumenta ipfa; quorum ope cætera reparari debuerant, et morbi fedes in viscere ponitur, cui omnium difficillimè fit medicina. Id quidem haud citò labefactatur, sed si semel infectum fuerit, vitium diu fervat; “ Quia pars est, inquit  
 “ Forestus (a); quæ promptè recipit aliarum  
 “ partium excrementa, tum ob situm inferio-  
 “ rem, tum ob multitudinem venarum eò per-  
 “ tingentium, tum etiam propter consuetam il-  
 “ lam naturalem purgationem.” His adde compagem solidam et vasculosam, remediis, quorum vires longo circuitu decoquuntur, antequam huc deferantur, haud facilè cedentem. Etiam post emendatam cruoris indolem, laxa glandularum fabrica pertinaciter obstat medelæ, atque ea medicamina, quæ harum mollitie adversantur, constringunt quoque arteriolarum orificia, et molestiorem reddunt menstruationem. Laxitas nativa, victûs prava ratio, vita deses et luxuriosa hunc morbum plerumque inducunt, *Rarius enim, ut ab eodem Foresto observatum, id pati visæ sunt agrestes mulieres.* Eadem quoque (b) fluxum uterinum suppressum sæpè præcedunt. Remedia ergo hisce morbis adhibenda sunt, quæ noxis, ex istiusmodi causis subortis, obviam eant; neque vomitoria repetita omittenda sunt: præter enim effectus, qui hætenus indicantur, stomachum expurgandi, solida stimulandi, et sanguinem mirè atterendi, hunc tanto impetu versus uterum pro-

(a) Foresti observ. lib. 28. Obs. 21.

(b) Opera Doctoris Freind, p. 67, 80.

pellunt, ut exempla prostant (*a*) in quibus sola vis ejusmodi mechanica tardatum fluxum repente profuderit: atque, nisi *δυσεμής* sit ægra, vel incommodè ferat emetici actionem, haud minora in fluore albo quàm in plerisque chronicis expectanda sunt. Sæpiùs autem in hoc morbo motu levissimo fatiscunt vires, unde incommodi plus quam fructûs accipiunt. Hoc ergo in primis indagandum, priùsq̃ quam porrigantur emetica ægris hujusmodi.

59. Nihil etenim ex omni parte perfectum atque beatum: sua secum trahunt commoda, et etiam incommoda vomitoria; nec minus verenda hæc, quàm appetenda ista, si fortè infelici auspice porrigantur. Infausti autem eventus remedii utilitatem haud minus prædicant quàm effectus optabiliores; insitam ejus vim demonstrant, efficaciam probant, dum porrigentis imperitiam vel temeritatem redarguunt, nec hominis excidii reum habendum est medicamen, sed manus quæ ineptè vel intempestivè ministrant. Quamvis autem, ex traditâ de emeticis doctrinâ, facilè perito patere possit, in quibus casibus utilia, in quibus nociva sint; haud tamen alienum est, ut brevi horum morborum enarratione claudatur dissertatio, in quibus vomitus imprimis vitandus.

imo, Nativa corporis structura apud nonnullos (*b*) scriptores causa existat, quo minus quibusdam propinentur emetica; quibus habitus macer et gracilis, collum extensus, pectus an-

(*a*) Plateri obs. med. p. 191. Hildan. obs. cent. 3. obs. 58.

(*b*) Vide Fallopium de Purgant. p. 81.

gustum, atque ad vomendum difficultas; quibus denique sanguinis sputum, animi deliquium, tussis molesta, familiaria fuere, ab emeticis liberati sunt: qui verò contrariâ temperiæ præditi sunt, horum usum salutarem ex consulto medicorum sæpè sunt experti. In vehementiorum usu hæc sanè perpendenda sunt, ne forsan temeritatis vel incuriæ pœnas luamus; nec in leniori vomitu præcipiendo penitùs omittenda. Idiosyncrasia quædam, experienciâ ægroto cognita, at à medico, nisi ab ipso didicerit, nunquam detegenda, hujus vel illius medicaminis usum vetaret, quod aliter ab ignaro porrectum multa mala est pariturum.

2do, In morbis inflammatoriis, ubi sanguis adusto lentore inquinatur, immeabilis in arteriarum finibus sistitur, neque vi propellendus; ut in febribus acutis, inflammationibus topicis, pleuritide, phrenitide, hepatitide, aliisque ejusmodi; vires vitæ minuendæ potiùs quàm provehendæ: ergo peractâ accessione, urgente sævissimo dolore, tutum non erit emeticum.

3tio, Neque, si multum lædatur visceris, sive partis alicujus actio, quæ tonica dicitur, sive æquilibrata potentia, quâ solida fluidis reniti deberet, minuatur, emetici fortioris vim mochlicam experiri licet, antequam ratio partis habitafit, an tantæ vehementiæ impetum commodè ferat, vel incommodi majoris fiat particeps. Sic v. g. in hydrope abdominali exsiccat emeticum, sed tumorem pro aliquo saltem tempore extendit.

4to, In pulmones emeticorum vis sanè ingens est, quia nisu vomitorio tam subitò per eos di-

mittitur sanguinis inassueta moles, quâ distenduntur vasa, comprimuntur vesiculæ, quibus fortiter reagens intra detentus aër, pressuram validam longè validiorem reddit; et, si dehiscencia priùs vasa sanguinem effuderint, vulnuscule certò certius ampliata hæmoptoe augebunt. Quin et in incipiente hæmoptoe, ab externâ causâ producta, dum sanguis adhuc blandus, nec sordidâ tabe contaminatus, vix ferè ad emeticum licet confugere, quo è vesiculis pulmonicis excutitur latens cruor, qui, stagnando corruptus, morbum, alioqui haud periculosissimum, intenderet. Pulmonicis igitur vix porrigenda sunt, nisi puris inundatio pulmones obruat, et lethum à suffocante materiâ, aliàs inevitabile, adfuturum sit.

5to, Denique cavendum est ab horum usu in eis morbis, qui pro causis agnoscunt sanguinem multum crassum, pituitam valdè tenacem, copiosam, penè immobilem, aliamve quamcunque hujusmodi materiem, cerebrum et nervorum fontem gravantem, ut gravior apoplexiæ, paraplegiæ, hemiplegiæ species, veteris, carus et ejusmodi. Altiùs enim morbum plerumque figunt, vel in ipsâ forte operatione hominem interimunt. Vix ab eorum usu dehortatione opus est, licet aliqua symptomata ea necessaria esse alioquin inuenerent, quando imminet adhuc hæmorrhagiæ metus, post vulnerata aut detruncata membra; vel denique quando per ampliores abscessus, aut aliud quodcunque ostium, apertus paratur exitus, per quem factò ingenti impetu emanet cum vitâ cruor.



A  
MEDICAL INAUGURAL  
DISSERTATION:

ON THE  
USE OF EMETICS,  
IN VARIOUS DISEASES.

By JOHN FOTHERGILL.

EDINBURGH,

M,DCC,XXXVI.

*To the following celebrated Professors,  
his Preceptors; viz.*

JOHN RUTHERFORD, Doctor of Medicine,  
and Professor of the Theory and Practice of  
Physic in the University of Edinburgh:

ANDREW ST. CLAIR, Physician to the King,  
Professor of the Theory and Practice of Phy-  
sic in the same University:

ANDREW PLUMMER, Med. Doct. Professor of  
Medicine and Chemistry at the same Place:

ALEXANDER MONRO, R.S.S. Professor of  
Anatomy and Surgery in the same School of  
Physic:

AND ALSO

CHARLES ALSTON, Doctor of Medicine, Phy-  
sician to the King, and Professor of Botany:

On Account of the many Favours conferred upon him,  
THIS INAUGURAL SPECIMEN,  
Which the laudable Custom of the University requires,  
Is offered, with all due Submission and Esteem, by

JOHN FOTHERGILL, A. & R.

A TRANS-

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A  
 T R A N S L A T I O N  
 OF THE PRECEDING  
 MEDICAL INAUGURAL DISSERTATION,  
 ON THE  
 Use of EMETICS in treating various DISEASES.

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P R O Æ M I U M.

**A**S vigour of body, *acumen* of mind, present health, and a foundation for future, with the sweetness of a life unmolested by disease, depend in great measure on the state of that noble viscus the stomach; so physicians, both antient and modern, have used every effort to preserve a function of so much utility to the body in a sound state. They knew, by experience, that if the stomach was healthy, less was to be feared from other parts; but this being diseased, other parts could not long remain sound. We daily observe that the gout, dropsy, scurvy, consumption, insania, the worst kinds of

fevers (and other still worse diseases, if worse can be) seldom happen but the stomach is first affected; and if by chance they should arise from some other part, yet they become more severe in proportion as this great animal laboratory recedes from a healthy state. Hence therefore it appears, how much those who minister to the aid of nature in curing diseases, ought earnestly to attend to its safety. But the faults of the stomach itself, and of the matters it contains, as also the diseases which arise from hence, often require the aid of depletion; and most commonly there is no remedy more happily exhibited, either to take off the faults of the one, or eradicate the effects of the other, than evacuation by vomit. Hence emetics were so much celebrated among the antients, that Hippocrates (*a*) even recommended them to the healthy, if they wished to remain so, and often advised to repeat them, although medicines of this class, common among the antients, were extremely rough and unmanageable, and could not be given without disgust to the patient and anxiety to the physician.

## PART THE FIRST.

I. **VOMITING** is that action of the stomach, diaphragm, and abdominal muscles, by which the contents of the stomach, be-

(*a*) Hippocrat. de diæta, lib. 3. et alibi passim.

ing squeezed as in a press, are thrown up by the mouth with great force; for by the contraction of these viscera, all the other viscera of the abdomen are pressed upwards; hence the pylorus is constricted, and the matters contained in the stomach being pressed by the muscular force of it (*a*), and the surrounding parts, into the upper orifice, they dilate it, and easily force their way through the contracted longitudinal fibres of the œsophagus.

2. Any powerful stimulus thrown into the stomach, and applied to its nerves, may excite this action, on account of the connection between the nerves of the stomach and those of the abdominal muscles and diaphragm.

3. Too great a quantity and bulk of things taken into the stomach, though they should have no other disagreeable stimulus, or at least but very little, may excite nausea, and then vomiting; such are cold water mixed with some aromatic substance, sweetmeats, and those dainties which, pleasing the palate, are greedily swallowed beyond the bounds of moderation.---Whatever irritates the nerves of the stomach, or any way greatly disturbs the equable motion of the nervous fluid, will excite vomiting; such as, a concussion, or vehement shaking of the head; the motion of a ship or carriage, to those not used to it; a strong imagination or recollection of some unpleasant nauseous thing: these, and the like,

(*a*) Wepfer de *Cicuta Aquatica*, cap. 15. hist. 1.

will sometimes affect the delicate with great disgust and vomiting.

4. But it is found that all substances, though endowed with a stimulus, do not with equal certainty produce their effects on the stomach and neighbouring parts, but sometimes promote an excretion by one, sometimes by another of the emunctories: antiquity therefore set apart certain substances for this purpose only, which they found almost constantly excited vomiting, and which experience had taught were peculiarly adapted above others to perform this office. These the Greeks called *Ἐμετικά*, EMETICA; the Latins VOMITORIA.

5. But the catalogue of these was defective among the ancients, though large; for they were acquainted with few emetics, which are not found to be either extremely rough and unfavourable, or altogether gentle and weak; at least if our catalogue of simples, marked with this title, be the same as theirs, as will appear to any one who examines their writings. The *Veratrum*, or *White Hellebore*, was sometimes fatal, and the action of others doubtful. What wonder then if patients afflicted with some dangerous disease, preferred any other kind of remedy to a violent and cruel, or else too gentle, uncertain, and often an ineffectual emetic? Hence the patient, alarmed, detested the physician, and the physician hesitated to give the remedy which promised so much relief; from which both the one and the other suffered considerable inconvenience.

ence. And although Hippocrates understood the method of moderating the force of emetics, yet many others less skillful were often disappointed in their expectation. And chemistry, which has discovered so many famous remedies, hardly supplies us with any emetic which we can give with safety to the young and delicate. Sydenham also in his time lamented, that even then there was wanting an emetic, which was both safe, and at the same time *sufficiently efficacious*, such as practitioners now find in the celebrated Ipecacoanha root. But it is not my purpose to descend to particular emetics; it will be sufficient only to point out their classes according to their various powers.

6. It has been the custom of some to divide this order of evacuants into *gentle*, more *powerful*, and the *strongest* emetics; and not improperly; for those different simples used at present to excite vomiting may be conveniently ranged under this threefold order. No regard however must be had to their efficacy as discovered by the senses, that is of smelling and taste, but the distribution must be founded wholly on experience.

7. Emetics called *lenient* or gentle are of two kinds; 1. Such as by their bulk, or by a very slight irritation united to their bulk, offend the stomach: such are, water that is warm, viscid, sugared, mixed with honey, oil, or salt; fat broths, infusions of green tea, carduus benedictus, chamomile-flowers, and others of the like kind,

kind, drawn from different aromatic plants, 2. Of this order are, the small dose of a more powerful emetic, which possesses a stimulus so strong, that in a diminished dose it can provoke either a nausea, or an attempt to vomit, without urging its effects any farther. These are chiefly taken from the class of salts, which, being immediately dissolved in the gastric juices, and quickly dispersed every way, are applied to the nerves, and shortly thrown up, and being wholly dissolved, are washed off by the liquors drank, and their effects presently cease.----A thread passed down the œsophagus, an irritation of the gullet by a feather wet with oil, a nauseating idea, an unusual agitation of a ship, the shaking of a carriage drawn over a rough road, and lastly, the slighter passions of the mind, belong to this class. I do not deny but the causes just mentioned excite violent vomitings in some persons, but in the generality they do not, nor do their effects continue long and powerful.

8. The class of *stronger emetics* is formed out of those mentioned § 7, number 2d, the dose only or cause being increased; or it may be formed of those substances which have a more firm texture, and hence produce a more slow but more vehement effect: for, shooting out their vellicating particles, they insinuate themselves by degrees into the cells and foldings of the inner coat of the stomach, adhere to the nervous fibrillæ, and create and increase uneasiness; and, the seat where they fix being covered, they can-



not be thrown off by the redoubled efforts of vomiting, until their strength by repeated operation be weakened; hence arises a longer and more vehement vomiting. --- Many medicines which operate by vomiting, in frequent use in the present practice, are to be added to this class: of vegetables, for example, asarum, ipecacoanha, wild horse-radish, mustard-feed, squills with their various preparations and combinations: of metals, some salts, the products of chemistry, as the vitriol of steel and vitriolic salts; but those prepared from copper seem to merit a preference to all others, that is, the sal cupri and its tincture. To these must be added emetic tartar, and a diminished dose of some out of the class following.

9. We call those the *most powerful* emetics which the dogmatic and especially rational art avoids, on account of the cruel and vehement effects often experienced from them, and which constant observation has taught cannot be exhibited without imminent danger to the whole machine, and which are very seldom prescribed except by a bold mediceaster, or by a regular physician in some certain disease which requires the most powerful remedy; although indeed it is difficult to fix the exact limits between this and the preceding class. The vegetable kingdom affords many medicines of this kind, especially under the class of purgatives, the dose of which being increased, often produces cruel vomitings, and particularly if taken from the resins.

Resinous substances are but little miscible with the animal fluids, and remaining undissolved, they accrete to the cavity of the stomach, and occasion the most violent pains, spasms, and excessive vomitings: this is evident from those tortures which the sick experience after taking the resin of jalap, or any other of the same kind, not rightly dissolved by triture, or made miscible with our fluids by some other method; whilst perhaps the natural humours are deprived of their native soap, and all is full of a watery phlegm. To these may be added the white hellebore, some species of the tithymali, tobacco, and many other plants called deleterious: the class may be increased also by the more acrid preparations of antimony, and those emetics prepared from mercury, together with many poisonous metals.

10. From the description hitherto given it is evident, 1. That vomiting cannot be excited without some stimulus (I mean any thing which can alter the motion of the vital fluid, or the action of the nerves) applied to some region of the nervous system. 2. That from the action of that upon the nerves, and of these upon the muscles, § 1. there necessarily happens an evacuation of the contents of the gastric region. 3. Lastly, That these can by no means happen without a strong compression of certain parts, a powerful concussion of others, and a great motion of the whole body. These always attend the most gentle vomiting; they increase, as the power

power of the emetic is extended; and, the stimulus being increased, they may be carried even to the ruin of the structure of the parts.

11. The fore-mentioned conditions are always connected with vomiting, and most of those changes produced or expected from emetics, are entirely dependent upon them: being about, therefore, to enquire, what are the effects of these, arising from that threefold cause, I shall reply to these questions; viz. What is the use of an emetic, merely as a stimulant? or, merely as an evacuant? and lastly, How far can it affect the whole body by its mechanical force?

## PART THE SECOND.

*Of the Use of Emetics, derived from their Stimulus.*

12. **A**NATOMY has not yet discovered any parts of the body which may properly be esteemed the objects of stimuli, except the nerves, which primarily suffer the effects of them, whatever they be, and propagate them to other parts, as appears by many experiments. For by experiments we learn, that not only the part to which the irritating substance is applied suffers a change, but also the effect is propagated to the origin, termination, and extremities of the spreading branches of the nerves, and also to the branches shooting off to the opposite region of the body, though from a different cause.

13. The

13. The principal effects are, a greater accession of the vital energy to the part affected, and a diminution of it in others; and, the equable moderate distribution of it being lost, the motion is both accelerated and confused. But these will all be different in degree, and more or less conspicuous, according as the vehemence and force of the exciting cause is different, and according to the disposition, number, and bigness of the nerves, and the thickness of the coats with which they are covered.

14. Most of the learned acknowledge, that this cause or energy, § 13. is a most subtile moveable liquid, endowed with all the common properties of a fluid, and derived from the brain, by a constant, gentle, placid motion, to every separate part of the body. Nor will any one deny this, who has attentively read over what Boerhaave (*a*) has written on this subject; or well considered what our celebrated professor of anatomy (*b*) has said upon it, in an order and method still more clear and beautiful.

15. Nor does it seem probable that the animal spirits are ever hurried along with such unbridled precipitate impetuosity, as to become the cause of so many prodigious effects, or to form the essence of such a number of diseases: or that this disposition to motion, can arise from any excessive preternatural mobility; for the impetus

(*a*) Boerhaave's *Inst.* § 275, ad 292.

(*b*) Monro's *Anatomical Treatise of the Nerves.*

of the spirits depends only on strong vital powers, whereas diseases of the nervous system most frequently occur in persons of an opposite habit and disposition of body, that is, in the relaxed and feeble; in whom the vital powers are weak. It is certainly extremely consonant to the laws of the animal œconomy; that this liquid should be moved sometimes quicker and sometimes slower: but there is so great a difference between the greatest velocity, and the greatest degree of inactivity, that we cannot easily allow this to be the only origin of diseases. The unequal distribution of the spirits may produce many tumultuous motions in the body, commonly attributed to a vitiated state of the nerves; and those phenomena which usually accompany diseases called nervous, are much more easily explained on this supposition; nor does the action of the muscles oppose our theory.

16. Any pungent acrid substance, applied to a nerve or its branches, produces this unequal distribution, so that spasms and convulsions arise; which may increase even to the extinction of life. Compression also made on the origin of any more remarkable nerve, produces the same effect; or even an obstructed egress of the spirits through their canals, from any cause whatever; by which the neighbouring tubes receive them in a fuller stream. The different proportion of solids and fluids peculiar to every age, as also the temperament peculiar to every person, very much increase or diminish this disposition;

tion; for the younger the person, and the softer and more relaxed his habit of body, the more readily, other circumstances equal, are the nerves irritated or compressed. Experience confirms this opinion: for the variolous contagion, even of the mildest kind, seldom attacks children richly fed, whose blood is full of spirits, and whose skin is endowed with remarkable softness, but dreadful contractions and spasms ensue: fits also not unfrequently supervene, altogether similar to a true epilepsy. Nor do hysterical fits always happen from a poverty or want of the vital fluid, since they attack women of leisure, and dissolved in luxury, more than others to whom a harder fate is allotted.

17. These things thus premised, we may establish this general rule; that if a disease arise from a stimulus applied to some particular part, it is to be relieved by destroying the stimulating cause, or by applying another stimulus to the opposite part; for the equilibrium being thus restored, the disease will terminate.

18. The effects mentioned § 13, chiefly take place in the nerves and muscles. Other, however, and different effects arise in the neighbouring parts, such as pain, redness of the skin, and heat; an afflux of humours with tumor or swelling; a compression and obstruction of the vessels; a destruction of them, suppuration, and gangrene. These happen to the internal as well as external parts of the body.

19. The remedy of which we now treat, possesses

esses all the general virtues of stimuli hitherto mentioned. It has this, however, peculiar to itself, that we may commonly prescribe more certain limits to the action of emetics, than to any other internal stimulant whatever; for other internal stimuli sometimes exceed the bounds intended, and rage more fiercely than is proper, or else are too sluggish and inactive; whereas the force of an emetic may be increased or repressed almost at pleasure, if we only except the more vehement poisons.

20. From what has been said § 13 to 20, it appears what use an emetic is of, considered as a stimulus. It produces remarkable effects, among which the following are the most considerable. The slighter species of apoplexy, which arises from a cold, sluggish, pituitous matter, the cause being recent, and the body not very old, is often terminated by an emetic prudently exhibited; for hence the thick humours are concocted and thrown off, the small mouths of the nerves are opened, their passage is rendered free, the motion of the torpid blood being at the same time accelerated. It produces the like effects in a similar kind of palsy.

The epilepsy is a disease common in children, arising from some acrid matter corroding and vellicating the nerves. It often happens in adults from the same cause, and also from the stronger passions of the mind; from severe pain affecting the limbs; from a disordered motion of the spirits, such as is common to hypochondriac and

hysterical persons. In these cases, if the fomes of the disease be moveable, it is thrown off by repeated vomiting.

The muscular membrane, which connects the cartilaginous segments of the trachea together, is formed of muscular contractile fibres, and obnoxious to spasm, especially in those in whom the nervous system is too irritable and moveable. These fibres are often instantly constricted, the cartilages are drawn together, and obstinately resist their usual elongation; the patient draws his breath quick, eagerly catches at the air, groans deeply; when at length fatigued with labour, and ready to sink under his anguish, he feels the spasm relieved, the breast is expanded, and he begins to live as it were anew.---What hinders, but that a dose of vitriolic salt, the salt of copper, or its tincture, speedily given, might calm these tumults, by irritating the stomach, exciting vomiting, and changing the course and track of the spirits? The experiment is certainly free from all danger.

When the blood begins to acquire that disposition which among the antients was called *atrabilis*; when the natural functions fail through a want of spirits; when the spirits improperly pass only to some nerves, and these only exercise certain functions of body and mind; in this case a better remedy can scarcely be exhibited than an emetic, moderated by certain cautions, as afterwards we shall have occasion to mention.

In spasmodic diseases, and many others of the  
nervous



nervous kind, which seem to arise from inactivity and languor in the chylopoietic system, emetics seem to be of real service. The *Chorea Viti*, a disease which certainly for obstinacy is second to few of this kind, even sometimes acknowledges the power of this remedy (*a*). And though emetics are not of use in these diseases merely by their stimulant power, yet they do much good by soliciting a greater afflux of spirits towards the organs, which suffer through a penury or want of them, and are hence obnoxious to disease.

Lastly, in most chronic diseases, when a thick pituitous matter spoils the comely habit, the solids, loaded with it, vibrate too slowly, and the fluids, now become viscid, are propelled through the vessels with greater difficulty, and, the general powers of the body being either lost or depraved, demonstrate either a want or too great a sluggishness of the vital fluid, as in a spontaneous gluten or acrimony; emetics, although they do not perform a cure merely as stimulants, yet they are to be preferred to all other remedies, especially if we take into the account the other effects of vomiting.

21. The other effect of the action mentioned § 18, is a quicker secretion of the thinner fluids: this the irritation or stimulus performs in two ways; first, it increases the motion of the blood in the larger vessels, by exciting them to a more frequent and stronger re-action on the fluids, and

(*a*) Cheyne's Essay on the Gout, p. 113, edit. 4.

procuring an attenuation of them; and hence an aptness to secretion: secondly, it facilitates the preparation, and accelerates the passage of the humours in the organs of secretion themselves. Hence, from the same stimulus different secretions are increased, according as it is differently determined to this or that secretory organ.

## PART THE THIRD.

### *Of the Use of Emetics as Evacuants.*

22. **I**T seems not improper to divide the effects of an emetic, considered as an evacuant, into two kinds: the first is a depletion of the stomach, its contents being thrown up; the second, an increased excretion in other parts by the exertions of vomiting. But as this does not acknowledge vomiting as its proximate cause, it may more properly be placed among the mechanical effects of an emetic, and merits the appellation of an universal evacuation. The other particular is an expulsion of the matters lodged in the intestines, or driven thither by the force of stimuli, or lastly, which have flowed back from the neighbouring parts into them; concerning which, a good method requires that we now speak.

23. Substances hurtful to the body, taken in by the mouth, or carried into the stomach from some other part, require the instant relief of an emetic; nor does the art of medicine know any more powerful aid effectually to extirpate the morbid effects of them, or to soften and meliorate

rate

rate some alarming symptoms produced by them, than a vomit.

24. Food and drink are justly reckoned among the *ingesta* mentioned paragraph 23; for the inevitable lot of life makes these necessary as long as we breath the vital air: but the reasons I pass over. And the very different quality of the substances from which our food is prepared, often foreign to the nature of our body; the incautious use of some things, and excessive gluttony in others; lastly, an appetite for something forbidden or hurtful, a fault in the choice of meat and drink, and in the moderate quantity of them; have introduced innumerable complaints into the stomach. Hence the fruitful progeny of diseases, threatening cruel pains to the stomach itself, and hurtful to the extreme windings of the vessels; all of which the nature of my undertaking requires me to explain separately, but the narrow limits of time forbid it: and indeed my labour would be lost, since the task, compleatly finished, was not long ago published under your auspices, in an elegant dissertation (*a*) *de noxis ex cibi potusque usu et abusu oriundis*.

25. Too great a quantity of things taken into the stomach produces the diseases there described; these are usually relieved by depletion, which, if the patient have a disposition towards it, is to be made by vomiting; for by this method the offending matter is quickest carried off, and any

(a) Autore Henrico Tong.

part of the crude unconcocted aliment prevented from passing into the interior parts of the body,

The vitiated quality of food requires the same remedy, whilst it remains in the stomach, or is not carried far beyond it. Substances which have a greater native tenacity than what the powers of the body can overcome, retaining their own nature, corrupt, and pass into a kind of ropy phlegm. The case is the same if the expulsive faculty of the stomach be weakened or hindered, which, as practitioners testify, often happens in debilitated habits; for then, though the *ingesta* be not remarkably faulty either in quantity or quality, yet they spontaneously contract a vitiated quality, which arises from, and is increased by their delay in the stomach. Hence arise different species of acrimony; hence the spring of mucus, and a tough pituitous matter; which as they separately prevail, or are mixed together, aided by the temperament of the person inclined to this or that, they produce different, and sometimes truly alarming symptoms. So many kinds of depraved appetite; a total loss of it; a diminution or excessive increase of it; a vitiated, lessened, or total want of digestion; or a corruption of the undigested matter; often arise from these as their proximate causes.

It may easily be learned from the patient himself, what had been the predisponent cause; and hence the quality of the matter will appear, and what remedies are to be used. Emetics evacuate the fomes of the complaint, and utterly eradicate  
the

the proximate cause. Yet we must not truit wholly to these; but by exhibiting strengthening remedies (a vomit being repeated at proper intervals) we destroy the disease from its lowest root.

26. If any acrid substance taken into the body either by chance or design, whether under the name of a medicine or a poison, threatens an injury to the structure of the parts, it is to be expelled as soon as possible, and especially by those passages where it may pass out of the body safely, without hurting the other parts. If only a small quantity has entered the intestinal tube, an emetic is to be greatly preferred to any other remedy, and often finishes the cure; nor must it be omitted, if a very small portion only continues to adhere to the stomach. The first class, mentioned section 7, affords an ample supply of remedies, by which many species of poisons are vanquished and expelled; and if there be such a thing as an universal antidote, it is perhaps warm water copiously drunk. In the choice of these remedies, however, there is need of prudence; expulsion does not always complete our wishes, but the tender parts to which the poison or acrid matter is applied, are to be preserved from its injuries, the pains to be mitigated, and the raging cruelty of the poison appeased, even while we attempt a speedy ejection of it. And here also, the nature of the matter taken into the body being known, points out to the physician the means of procuring a timely relief

relief to the unhappy sufferer. So alkaline salts diluted, are opposed to the acid poisons; saponaceous substances prepare the oily for mixture; water and watery bodies divide salts of all kinds, and destroy their powers; acrids take off the effects of those which have an oily glutinous viscosity; and so of the rest. The reader may consult what Boerhaave (*a*) has so excellently written on this subject, in his chapter on *antidotes*.

27. Nor does there only happen by emetics an evacuation of the ingesta, but also of all the humours carried into the stomach from other parts. These come either from the vessels of the stomach itself, or from those of the neighbouring viscera. And indeed the effects of pungent substances, mentioned § 21, are no where more clearly seen than in this viscus. This will appear, if we consider the abundance of nerves dispersed through the coats of it, the number of glands and their office, and lastly the capacity of the vessels with which this viscus is furnished in proportion to its bulk. The softness of the coats gives an easy entrance to the nerves, and a spacious cavity exhibits a large superficies. Hence arises a more remarkable action, or a more plentiful excretion of the gastric liquor; which, as it is always large, if it be increased, must necessarily in some measure alter the whole body, by dispelling and drying up the serous humours.

(*a*) Institutiones Medicæ, § 1119.

Hence arise those excellent effects of emetics in diseases originating from a ferous vapid *colluvies*; as in catarrhs, the leucophlegmatia, diabetes, *fluor albus*, and others of this kind, of which we shall speak more fully in the following sections.

28. The liver and pancreas are situated near the stomach; and both of them sometimes discharge their secreted fluids into its cavity; which by their quantity or acrimony, or both, may disorder chylification. The bile is frequently accused as guilty of producing diseases, the pancreatic juice more seldom. The antients blamed the bile as the parent of the most cruel disorders; but many of the moderns deny this, and contend that the bile is not so frequently the cause of complaints as the antients imagined; but if these had well understood what the antients meant by bile, the wiser amongst them at least, would perhaps have thought their *dogmata* ought not to have been so rashly rejected; for not only the liquor supplied by the liver and gall-bladder came under the title of bile, but also a considerable part of the whole mass of blood, which the moderns commonly call *oil*; which, as we learn from chemistry, is as fruitful a source of diseases at present, as it was formerly under the celebrated name of *bilis flava*. But here we treat of the vesicular and hepatic bile, propelled upwards into the stomach, or of any other liquor brought thither, which is productive of like mischiefs as the bile itself; and such is the oily humour sometimes thrown up by vomiting;

miting; yellow, of an horrible bitterness, and taste scarce ever to be forgotten, resembling the bile, except only that the bile never blazes in the fire, but this, like pure oil, catches flame if it be thrown from the mouth on burning coals. It arises from oily meats, changed by the heat of the place into this most filthy disagreeable matter; aided also by too insatiable an appetite, as *Horace* intimates:

*Nempe inamarefcunt epulæ sine fine petitæ;*

*Illuſique pedes vitioſum ferre recuſant*

*Corpus.* -----

The bile, and this yellow filth approaching to the nature of it, have alike this quality, that stagnation in a hot place renders them both more acrid and horrible; much in the manner of oil, which, exposed to a gentle continued heat, passes from a taste extremely bland, a smell not remarkable, and a yellowish colour, through various degrees of corruption, to the highest pitch of putridity, and at length puts on the most violent acrimony to the taste, exhales the most rank mephitic smell, and presents to the eyes an ugly blackness. Both kinds of bile just mentioned, evidently undergo similar changes, are subject to the same laws, wherever collected in the body, until the uneasy guests promote their own expulsion. For otherwise the pitiable sufferer is tortured with dreadful cruel pains, gripes, nausea, and vomiting, which do not however terminate the pain, but continue to harass the patient even till death, especially



especially if a hot temperament of the person, the heat of the sun, a rancid or fermenting food, have added fuel and flame to the disease. Here then is the cholera, the most direful of diseases: a fever is kindled, the viscera are inflamed, the strength fallen sinks under the load, and unless another Sydenham sits by the bed, and watches over the patient, a gangrene creeping on the viscera terminates the cruel torture and life together. But the matter which causes the disease is seated within the confines that sustain the force of an emetic; and the removal of the cause is indicated; why not then try an evacuation by emetics, or downward by purgatives, or by both, seeing it is yet lodged in the *primæ viæ*? It is not without cause that prudent physicians have rejected the use of these in so great a violence of the disease; for, whatever good effect the one or other may perform in other diseases, or in a milder degree of this, yet in so violent a *cholera* we must rather use restraints than stimuli, as will easily appear to any one who considers the case: for the mucus of the stomach and intestinal tube, as far as this acrid inflaming liquor has extended, being abraded, it is now applied to the naked nerves, and excites cruel pains, violent obstinate spasms, kindles burning fevers; and, the remaining mucus being constantly thrown up by the emetic, the cause of the disease is increased, and, by the continued efforts of vomiting, the dreadful effects are redoubled; for although the emetic have but the smallest degree

degree of stimulus, yet this, whatever it be, adds strength to the enemy lodged within; stimulus is added to stimulus, and by the united efforts of these the patient perishes. But if the disease have not attained this degree of violence, if hope be not quite cut off, and if every thing persuades us to attempt the cure by emetics, then the point will turn on a skilful choice of the remedy: for neither bile, nor the oily matter, will unite with every kind of liquid; it refuses one, but follows and unites with another. That, therefore, which is most proper to promote a mixture must be used, regard being had to the known disposition of the disease, to which the remedy must always be opposed. Hence *saccharata, mellita, saponacea*, mixed with acescents, and all those mentioned section 7, number 1, which act rather by their bulk than stimulus, seem to promise success above others.

“Whenever bile is to be evacuated,” says Forestus (*a*), “after much broth, or after a free drinking of some liquid, vomiting is to be excited; for bile, like oil, swims on the top of these, and on that account is more easily evacuated; its acrimony also is moderated by a mixture with them.” A rule is certainly always to be observed in curing bilious vomiting; which being neglected, the worst mischiefs sometimes ensue. A cathartic, inconsiderately given, carries a part of the corrupted matter

(a) Forest. Observ. lib. 18. obs. 3.

lower, and perhaps into the blood; hence again new miseries arise.

29. So great an overflow of pancreatic juice seldom occurs, as alone to be esteemed the cause of disease; but in the course of diseases, it may increase them: for as in health so large a secretion of it is made, as Brunnerus' experiments shew, in diseases arising from a redundant lymph it may yet become more copious, and an evacuation of this by an emetic will diminish the ferous colluvies.

30. The accessions of fevers are commonly accompanied with nausea, vomiting, and other symptoms, which shew the stomach to be in a bad state: it ought, however, to be carefully distinguished, whether this sickness arises from the viscus itself, or from its contents; for an inflammation of the membranes of the stomach requires one kind of treatment, and the stomach loaded with corrupted fordes, and free from inflammation, another. It seems not to have been well understood by the more antient writers, that this viscus is equally obnoxious to inflammation as any other part whatever, until Frederick Hoffmann (*a*), in his *Dissertations*, observed that it happens more frequently than is commonly supposed. He lays down the diagnostic signs by which the physician may avoid the latent rocks on which the incautious ea-

(*a*) F. Hoff. *Dissertat.* decad. 1.

sily strike. All these Boerhaave has explained in his usual manner, with large improvement, in his book *De cognoscendis et curandis morbis*, to which he has annexed a neat method of cure. From an ignorance of the true source of the commotions which so often happen in the stomach in the beginning of fevers, have arisen those contentions, so anxiously agitated among practitioners, concerning the use of emetics in treating these disorders. Some argue strenuously against their utility, adduce instances of their pernicious effects, and with a grave countenance forbid their use: others extol their salutary effects to the skies, and call in to their aid histories of successful cases not less credible than the former. Indeed it is easy to see that neither of them are much mistaken; for what excruciating tortures does a vomit excite in the stomach, when the vessels are turgid with thick blood; when the distended nerves suffer the most violent pains on the slightest collision against the *ingesta*; and when the coats of the stomach are affected with tumour, hardness, and pain, resembling a true phlegmon on the external surface of the body? What mischiefs then must an operation, joined with such violence, produce in such a situation of things? But the cause of pain and uneasiness oftener proceeds from the contents of the stomach, and then certainly an emetic produces commendable effects; and Hippocrates, Sydenham, and the most famous practitioners in the healing art,

warrant

warrant their use. Reason also, supported by practice, speaks the same thing: “(a) If vomiting,” says Sydenham, “or an ineffectual propensity to it, has disturbed the patient, an emetic must by all means be prescribed.” For, as Hippocrates testifies, if any one chuses to exhibit much water to a person vomiting, ἐκκλυσθήσεσθαι διὰ τὸ ἐμέειν σὺν τῷ ἐμέτω, ὡτῶ μὲν διὰ τὸ ἐμέειν ὁ ἐμέλος παύεσθαι; *the cause of the sickness will be washed off with the emetic, and thus by a vomit the vomiting will cease.* Nor is this the only advantage gained, but it will also be of great use both to the physician and patient, through the course of the disease, as we learn from Sydenham. “To exhibit a vomit, when there precedes a propensity to it, is so necessary, that, unless the humour be expelled, it will become the source of many diseases, a torment to the physician through the whole course of the cure, and throw the patient into great danger. Of these effects the chief and most common is a diarrhœa, which generally follows in the decline of a fever, as often as an emetic, when indicated, has been omitted. And although the propensity to vomit may have been over some time, yet the diarrhœa will cease as soon as an emetic is exhibited, provided the patient have strength to bear it.” Nor has this famous writer delineated the blackest state of things; for this putrid matter, by stagnating in

(a) Sydenh. de morbis acutis, § 1. cap. 4.

the stomach, becomes more putrid, and, passing into the blood by the absorbents, rendered empty by heat and loss of fluids, it pollutes the vital fluid with malignant fordes, and renders the fever in all respects more severe; all which might have been prevented, if an emetic had been exhibited as soon as this propensity to vomit appeared. Concerning the choice of emetics, a caution must also here be repeated; viz. that we choose those which are most fitted to wash off the fordes, are most opposed to their nature, and change and correct them; and lastly, which may perform the office of diluents, if by chance (which may happen) any part of them should be absorbed into the blood. For these purposes, those mentioned section 7, class 1, are suitable, being rendered more efficacious by some out of § 8; for example, oxymel of squills with ipecacoanha root, or with a large draught of simple oxymel, or any other thin liquor, as the occasion may require.

31. In treating fevers, we ought not to forget, a caution mentioned by most practical writers, that in all diseases where a plethora is present, or where the habit tends to one, and where the condition of the patient requires at the same time an emetic, bleeding ought always to precede it, lest the strong effort of vomiting, and a sort of momentary tetanus, should rupture the distended vessels, or too great an impetus of the blood be determined to those parts where there is least resistance. For, the vessels being ruptured,

tured, pour out their fluids, and the patient immediately dies, either of an apoplexy or an hæmoptoe; or he perishes at length of an incurable phthisis, or from an affection of the lungs; or is cut off by the morbid affections of some other viscera. That vomiting seems to be of most use, which is excited immediately after bleeding; for the inconveniences of a plethora are then more certainly avoided, and the salutary effects of the emetic are more certainly obtained, especially if the disease be a fever, which requires the help of both; for the vessels being emptied of part of their contents by bleeding, sometimes suddenly become turgid again, either by the rarefaction of the blood, or its bulk being increased by the quantity of liquids drank on account of the great thirst; hence the same inconveniences arise as before: nor can we exhibit an emetic before bleeding has been repeated, though it might have been given with safety a few hours after the first evacuation.

32. The operation of emetics in intermittent fevers seems something wonderful, as they sometimes exhibit effects not less difficult of explanation than the nature of the disease itself; for although the extremities of the sanguiferous vessels, or perhaps sometimes the nerves, are principally affected, yet an evacuation of the matters collected in the intestines is of great moment. There are instances of persons cured by a vomit only, whether spontaneous or excited by art; whilst bleeding, except in plethoric habits,

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generally

generally does harm, and renders the disease more difficult of cure. But emetics, prudently repeated, carry off by degrees the corrupted fomes of the disease from the *primæ viæ*, accelerate the motion of the blood, and lastly either take off the disorder, or make way for the safe exhibition of a febrifuge; which otherwise would fix the fomes of the disease more obstinately, and, an evacuation being excited upwards or downwards, it would lose its effects.

33. Nature anxiously attempts, by the passages opened by chance or art, to throw off the prepared febrile matter, and again restore the body to health. Sometimes she attempts it by the emunctories appropriated to certain excretions, as by spitting, vomiting, alvine fæces, sweat, or urine: at other times by passages less proper, as when tumours arise on the external surface, and the like. It is a rule well known to all, that (a) *Quæ educere oportet, quo maximè vergunt, eò ducito per loca convenientia*: “Whatever is to be evacuated, ought to be expelled by those natural emunctories to which it principally tends.” If it appears that the crisis of a fever will happen by spitting, the aiding hand of art ought to promote that secretion. The like rule must be observed in vomiting, if we know it is critical, or excited by some matter offensive to nature; but if it arise from inflammation of the stomach, and cannot be relieved by a vomit, it ought to be

(a) Hipp. Aphor. § 1. Aphor. 21.



stopped. The case is the same if the matter attempts an egress by any other emunctory; for the longer any concocted matter, fit for expulsion, is retained in the body, the greater inconveniences it produces. The purulent fever affords us a melancholy but just example of this; when, in those affected with the small-pox, the secondary fever, so called, supervenes from an absorption of purulent matter: nor is the critical putrescent matter of any other fever less malignant, but requires instant evacuation. There are remedies at hand proper to promote this or that evacuation, according as nature points out the way; only we must observe, that as the concocted matter of the disease, which passes off through the pores of the skin, is so loaded with contaminating particles, that it often affects the healthy; so a similar matter is deposited in the cavities of the stomach and intestines, which is happily to be carried off sometimes by a cathartic, sometimes by an emetic; left, perhaps, *being left after the crisis of a disease, it should occasion a return of it (a)*. Celsus also advises, that it should be carried off by vomit after a fever (*b*).

34. We may add a great number of diseases to those already mentioned, which receive singular help from this remedy. There are few chronic disorders which do not require the help

(a) Aphor. Hipp. § 2. Aph. 12.

(b) Celsi medicina, lib. 3. cap. 7.

of emetics; but a particular enumeration of them would lead me too far. Most diseases common to children, a ricketty or strumous disposition, the saburra, fomes and nest of worms, and the like, are often successfully cured by emetics. The gout, dropfy, a milder degree of scurvy, common to adults, sometimes are relieved by vomiting: the chlorosis, and fluor albus, in the weaker sex, often require this help. A catarrh, diarrhœa, dysentery, cæliac passion, and every disease arising from a serous colluvies, are relieved by a vomit. It is scarce necessary to mention how much emetics, exhibited at proper intervals, contribute to promote long life. There are some persons at present, who, though not given to gluttony, nor wanting the means of carrying off the dregs of a full meal, yet, mindful of the advice of the antients, esteem vomiting of so much consequence, that two or three times a month they empty the stomach of its fordes by a vomit. He who studies the most exact rule of living, often necessarily commits some error in diet. Hence sooner or later the fault affects the stomach, and there first lays the foundation of future disease. Sicknes, or a troublesome nausea, is sometimes felt, a loss of appetite, and various other symptoms appear, according to the different nature of the cause, and the manner in which the stomach is affected. Many betake themselves immediately to some celebrated tincture, drawn with spirits from bitter aromatic plants; in this they confide and indulge

dulge themselves, till, habituated to them, they at length die with their stomach and bowels parched and worn out. We know no remedy which seems to promise so many and great advantages to sedentary persons, liable to crudities in the *primæ viæ* from a sedentary life, as an emetic. It carries off the disease when produced; it destroys its proximate cause, by washing off the acrimony which most commonly constitutes it. To the studious, therefore; to those whose state of body forbids much exercise; and lastly, to persons who sit much in their business, or on any other account are exposed to similar diseases, I would recommend the frequent use of emetics.

## PART THE LAST.

### *Of the Use of Emetics, arising from their mechanical Force.*

35. **T**HE third question remains yet to be explained; viz. What are the mechanical effects and uses of emetics in removing diseases? We shall therefore next enquire into the parts affected, what change they undergo, what is hence produced in other parts, and what happens in the whole body.

36. The abdominal muscles being contracted, (§ 1) and made rigid, almost like the bony column which defends the posterior parts, not moveable by any force of this kind; and the

diaphragm being strongly forced downward, to which are opposed the immoveable bones of the pelvis, the cavity of the lower belly is every way diminished, and the whole contents of it powerfully squeezed together. Nor is there any part of the abdominal region free from this forcible pressure, the great force of which is evident from the vehemence with which the contents are thrown upward; for certain experiments incline us to believe that there is no contractile power in the stomach sufficient to throw up its contents, till assisted by the strong compression of the parts mentioned, which compleats the evacuation; and the soft viscera lying under these parts, are affected with the violence of their action, whence great and useful effects may be expected.

37. But before we enter into a disquisition of these effects, it will not be improper to take a view of the actions of the abdominal viscera, according to the following general division of them; that, their office being known, we may more easily know the morbid changes which take place in them, and that it may more clearly appear in how many ways this vehement mechanical alternate compression of these viscera may be of use.

38. Their principal offices are, 1. To prepare from the ingesta a matter fit for nourishing the body: 2. To separate what is proper for nourishment from that which is improper: 3. A farther preparation of the same matter, when  
changed

changed into blood, by powers situated beyond the abdomen: 4. To secrete liquids extremely useful to the purposes of life: 5 and lastly, To separate and throw off from the nourished parts, the residue of solids and fluids now become useless. Thus; 1. The stomach and small intestines prepare the chyle. 2. The lacteals and absorbents separate the more fluid from the grosser parts. 3. The blood in the large meseraic arteries, and others dispersed through the abdominal viscera, suffers a continual concussion, reciprocal compression and propulsion; all which are more especially observable in the spleen, 4. The blood, thus prepared, flows constantly through passages appointed for it; viz. through the liver, pancreas, and the numerous glands every where dispersed through the lower belly; in this course the quality and form of it are changed, according to the laws appropriated to the nature of each particular organ. 5. The grosser filaments being corrupted, are pressed forward and timely excreted: the thin and watery part of the blood, loaded with salts and oil, unfit for nutrition, passes off by the kidneys, and forms the urine. All these offices are promoted at the same time, and by the same means; that is, an alternate constant agitation, the necessary consequence of respiration; for if this motion and gentle concussion of the abdomen should cease, there would be no force sufficient to propel the fluids through such narrow winding canals, especially

cially in the lower part of the belly, where they sometimes lie under a considerable pressure: the force of the heart also would be unequal to the labour imposed upon it; the great power of absorption would cease, though too great to be limited by any prescribed bounds; for the viscera, not being agitated by the motion of other parts, a spontaneous viscidty would arise in the fluids, and gradually obstruct the canals, or form so many impediments in the small tubes, that their progress would presently cease, either in some or all the viscera, according as these mischiefs had more or less extended themselves. And, indeed, the ætiology of diseases shews, that many complaints of the abdomen arise from one or other of these causes, or from both concurring together. An attenuating remedy, therefore, which accelerates the motion of the parts, is more especially indicated.

39. By the effort of vomiting, the superficies of the viscera are strongly pressed together, their bulk is diminished, and the fluids circulating through them are pressed together, rubbed one against another, and against the sides of the vessels: they are also propelled forward, and driven out where a passage opens for them. Hence secretion and expulsion is quicker; the thick matter is resolved and prepared for ejection; all the actions (§ 37) rise to maturity, vigour appears in the organs, and, all obstacles being removed, they act with ease; on which both the  
quantity

quantity and quality of those secretions, which may be esteemed the preservatives of health, immediately depend.

40. The inner cavity of the stomach is extremely full of glands and exhalant vessels, from the villous flexible mouths of which a liquor is secreted, by which it is lubricated and preserved moist, the nerves are defended from the injuries of the food, and chylication is promoted. But the mucous nature of this liquor necessarily diminishes and retards its secretion, loads the glands with a viscid matter, and gradually subverts their office, especially if its motion be slow, which is commonly the case with a mucous fluid. Hence arises a deficiency of the gastric fluid, crudity, and indigestion, an appetite diminished or too much increased, heat in the stomach, sometimes nausea, and thirst. The same mischiefs sometimes occur from dried crufted fordes lining the cavity of the belly, as after an acute continued fever, when the attendants, or perhaps the too cruel physician, have unjustly thwarted nature, craving a supply of her diminished lymph. Diluents are not sufficient in these cases, they even relax the vessels more; hence the languid fluids, by their delay, presently thicken, not easily again to be resolved. An emetic, which produces the effects mentioned § 29, is of great service in these complaints; for the whole abdomen should be considered in this respect as somewhat similar to the lungs. Indeed, every viscus has some office peculiar to itself;

self; but the motion by which a constant change of fluids is promoted and takes place in every one, arises from some other part; so that a mixture, compression, attrition, solution, and the like, take place in the fluids here, just as happens in the thoracic viscera. The same cause produces the same effect, though in different organs: a vomit, therefore, performs speedily what nature by slow steps attempts in vain to obtain.

41. Costiveness, the usual companion of a sedentary inactive life, generally arises from a deficiency of the mucus of the intestines, and from a want of the gastric juice, supplied from the glands and vessels, (§ 40). The gastric juice ought to render the fæces soft and moveable, and the mucus procure them an easy descent. The cause of this defect is the same as mentioned above, (§ 40) and the cure must be attempted by the same means, only with the additional help of exercise and motion. I do not suppose that this complaint always arises from this cause; but if it has arisen from any other, it is increased by this, and the person, not regular before, becomes at length costive. Gentle purgatives, indeed, carry off the fæces, remove the present inconveniences, and moderate the uneasiness of this situation: but if the patient indulge himself too much, as often as costive, in remedies which seem to give so much relief, he will scarcely avoid other inconveniences from this quarter; for, all the humidity being drawn off with the fæces, the belly will become still more costive,  
the



the viscera will be obstructed and stuffed with the remaining thick matter. On two accounts, therefore, (§ 34, 40) an emetic recommends itself to persons of a sedentary inactive life; that is, as it expels the crude matters, and by accelerating motion attenuates the viscid, and thus performs the office of an excellent diluent.

42. A complaint of an opposite nature sometimes afflicts the stomach and intestines; that is, a kind of deluge of a watery liquid, in which the *ilia* being immersed, become tired, lose their heat, and the parts destined to perform the vital function become unequal to the task. A weight and langour about the precordia, frequent spitting, loss of appetite, belching up a watery matter, more especially troublesome in the morning, great nausea, but suddenly going off, frequent liquid stools without pain, with universal debility, inactivity, and paleness, are the signs of this watery inundation, and at the same time point out the ferous dissolved state of the blood. The symptoms now mentioned pretty clearly indicate the method of cure. An evacuation of the redundant fluid, and strength added to the small vessels, are first necessary; hence will follow a firmer crasis of the blood, and a change of its pituitous diathesis; and for these purposes emetics are especially useful. Hence we see why a vomit checks a diarrhoea, and also removes costiveness, according to the maxim (*a*) of Hippocrates, repeated and approved by Celsus.

(*a*) Celsi medicina, lib. i. cap. 3.

43. The structure and office of the pancreas, being similar to that of the salival glands, render it liable to similar complaints; namely, to have the secretion of its fluid either diminished or too much increased. In both cases an emetic is useful; it removes the obstruction, if not too obstinate, and, by compressing the viscus, carries off the superabundant fluid.

44. A little below the pancreas, the aliments, now rendered liquid, are absorbed by the mouths of the lacteals, and immediately carried to the meseraic glands. The slow motion of these, and the smallness and winding structure of the vessels, promote a separation of the thin from the thicker parts, but render the passage of the chyle to the blood difficult, especially in delicate habits, and those who feed on bad food, or have the structure of these parts badly formed. Children, from inexperience, weakness of their constitution, and strong inclination to gross improper food, are more subject, than persons of more advanced age, to infarctions and swellings of the meseraic glands. Similar causes will produce similar diseases in adults, but they are not so common, for we see in reality that children are most subject to these kinds of obstructions. At this age there is scarcely any thing more pleasing to the palate than raw unripe fruit; leguminous, farinaceous, viscid substances, and other kinds of eatables the most viscid, are then especially sought after and used, without any attention to the effects this species of luxurious

appetite may produce. Hence a tough matter is formed in the stomach, and at length passes into a viscid liquor, though hardly changed except in appearance: passing from the stomach, it meets with an inactive bile, is diluted with it, but not dissolved. The more fluid part enters the lacteals, but on account of its tenacity stops there: the cause is every day renewed, the obstruction grows and increases, the tumor becomes harder, presses on the neighbouring parts, and blocks up the passage to the veins; hence an atrophica is produced, and the miserable sufferer daily pines away: or, if the disease does not proceed so far, nor wholly obstruct the glands, yet an imperfect chyle is mixed with the blood, contaminates it, and, the glands being every where affected, especially those about the face and neck, the secretions made from it are vitiated; the face becomes swelled and distorted, and shews either a true struma or a disposition verging towards it. This is, doubtless, a dark face of things, and difficult for the physician: the solids have lost their strength, the fluids are too viscid, and the parts which ought to change the aliments into the nature of the body, being depraved, leave concoction imperfect. The glands also being obstructed, the blood is precluded all means of acquiring new vigour; and the glands, once clogged with viscid matter, with difficulty perform their office and evacuate their contents. It appears, therefore, that every kind of help must be used to remove so obstinate a disease.

A resolution

A resolution of the tumours is first to be attempted, that, as far as can be done by food and medicine, we may nourish the body; cure the depraved, and strengthen the weak parts. Then the texture of the parts in which the disease is seated must be so strengthened as to concoct and expel the offending fluids, regard being still had to the manner of living. They who know the situation of the mesentery, will easily conceive with what violence it will be pressed on every side, by the efforts of vomiting; and what effects will follow on glands newly obstructed, on the neighbouring parts loaded with a foul matter, (§ 39) on the pancreas abounding with the like, (§ 43) and lastly, on the stomach, by throwing up the acrid humours (§ 34) hurtful to it, and occasionally supplying new strength to the disease. But we ought carefully to examine if the viscera are found, corrupted by no ulcer, and wholly free from any putrescent waste; for otherwise an imprudent emetic would be very hurtful. The same also is true, if from laxity alone a rupture be feared; for in this case mechanical force must be sparingly applied. Nothing else forbids the use of an emetic; nor will our expectations of great good from it be disappointed, provided the obstructing matter be moveable, and the strength of the patient sufficient to bear repeated operations.

45. Of all the abdominal viscera, the spleen is of the softest most delicate structure, and the fleshy muscular columns seem rather adapted to  
support

support its flexible fabric, than to propel the large quantity of blood it receives: nor is the impetus of the heart, being diminished in this viscus by the winding structure of the vessels, nor the strength of the artery, sufficient for this purpose; but they are assisted by a constant gentle agitation, which the spleen receives from its connection with the diaphragm, its nearness to the abdominal muscles, and its pendulous situation: and from these causes chiefly the progress of the blood through the vessels of the spleen is thought to be preserved. If therefore the usual motion stop, or be for some time diminished, as happens to those of an inactive life, the blood is retarded in the small cells and cavities, becomes thicker, and is in the greatest danger of producing an obstruction, from a want of the necessary mobility and usual impetus, the causes of a free easy passage to the blood. The mode of giving relief must be varied, according to the stage of the disease and the different causes that may have produced it; for one method of cure is not proper for every person affected with complaints of the spleen. If the infarction be recent, and the hardness great; if it has arisen from omission of exercise, or too great an application of mind to some object; if there be a sense of painful distension without much matter collected, and the habit of body in other respects good; mechanical compression may be applied to advantage: but if the hardness seems to indicate a schirrus, or if the spleen has been inflamed by a preceding fever, and con-

verted into a bag of pus, then we must have recourse to other remedies, lest by irritating the ichirrus we change it into a cancer; or, the membranes confining the pus being ruptured, the abdomen should be overflowed with a purulent matter, or the liver affected with a putrid waste.

46. Among the diseases which affect the liver, the unsightly jaundice most frequently discovers itself to view. Medical writers have assigned many proximate causes of this complaint. But the author of an elegant little tract on the jaundice, inserted in the *Medical Essays* † has saved me the trouble of reciting them separately, or discussing them. We may allow with this author, who chose to conceal his name, that the most frequent causes are, stones generated in the vesicula fellea, and lodged in the duct, too narrow to give them passage: for, besides the histories adduced by this author, his other reasonings in the following volume ‡ abundantly confirm it. Now supposing this to be the case, which seems highly probable, medicines which act by mechanical force, are to be preferred to all others. Walking, riding, and other motions which considerably agitate the body, are of this class; by the help of which the gall-stone is pushed forward, and the obstructed bile issues forth. These, doubtless, greatly promote the descent of the bile; but sometimes they fail, the disease requiring a stronger propelling cause; and if an

† Vol. i. art. 33.

‡ Vol. ii. art. 28.

emetic ever be useful from its mechanic force, and if the seat of disease, and the nature of its cause, ever favour its salutary effects, it is certainly here: nor are we often disappointed in our expectations; for, a large quantity of liquor being drank, the stomach, like a bag turgid with a warm fluid, is applied almost upon the constricted duct, and relaxes it; whilst the bile lodged behind is urged forward by the action of vomiting, (§ 36.) Or if we suppose the cause seated in some other part, for example, in the first origin of the biliary ducts, where they arise from the extremities of the *vena portarum*, or elsewhere, and that the obstructing cause be a thick purulent matter, or small stones lodging fast; in these cases an emetic will be of considerable service, if the disease can be remedied by the help of art.

47. Whenever the kidneys are affected with pain, nature, by drawing the stomach into consent, and exciting motions or uneasiness in it, from a common consent of nerves between these two viscera, seems to point out the way by which any thing that would be hurtful to the kidneys, by a longer delay, may be dislodged from them.

1. A gypseous, mucous, purulent matter, either produced here or brought by metastasis, being too thick to pass the fine vessels of the kidneys, or having passed, lodges too long in the renal sinus, daily increases in bulk, presses on the neighbouring parts, or rubs against them, and causes the most excruciating torments. A stone being in this case often formed, is forced into the ure-

ter, too narrow to receive so large a substance, the muscular sensible coats of which being injured by the rough superficies of the stone, contract themselves closer, and strongly oppose its farther progress, the pains at the same time becoming almost too great to be endured. Venesection being first performed, the stricture is to be removed by topics and universal remedies; after which, mechanical force performs what art can do. Nor is this the only effect of a vomit in this disease; but the liquor drank performs the office of a fomentation, and, together with a clyster, makes a kind of internal bath, which, by its watery halitus, relaxes the strictures, and, by increasing the volume of the contents of the lower belly, it acts with greater force on the kidneys and ureters.

2. A morbid flaccidity of the kidneys from weakness of the vessels, sometimes permits such a flux of watery liquor to pass off, as resembles a species of the disease called by the Greeks a diabetes. There frequently is passed a considerable quantity of thin watery urine, almost without colour, taste, or smell, attended with a troublesome thirst, prostration of strength, great loss of fluids, and a waste of the solids. But a worse species of the disease happens, when there is an efflux of a whitish, chylous, sweetish liquor, which antient practice supposed peculiar to this disease, and which modern practice has confirmed; for though the disease be very uncommon, yet it is met with sometimes; and whether it may have arisen from relaxed



relaxed vessels of the kidneys, or a dissolved state of the fluids, or from any other cause, the curative indications, as Sydenham observes (*a*), must be wholly directed to strengthen and invigorate the blood, and to restrain the preternatural flux of urine; and we may add, to take away the morbid laxity of the vessels of the kidneys.

What has been said above, (§ 42) concerning the power of emetics in evacuating fluids, sufficiently evinces how much it answers to the two first indications. The situation of the kidneys, and their nearness to the bones, shew what mechanical effects may take place in them, and how strongly the efforts of vomiting may evacuate the redundant humour from their substance. It certainly expels the lymph, which in some measure macerates the kidneys, and thus restores the lost tone to the fibres.

48. It is hardly necessary to observe how exceedingly the muscles, affected with a strong spasm, compress the uterus, tumid with its burden, (§ 36.) The time of delivery therefore approaching, every thing which adds a stimulus to them must be carefully avoided: but for the same reason we see how much may be expected from this source, if the natural strength should be deficient, or by repeated efforts and straining should be so far reduced as to be unable to expel the infant, though it be well situated, of a proper

(*a*) Sydenh. *Epist. Resp. oper.* p. 272.

size, and the parts also of a natural structure; in this case an emetic, which acts quickly and powerfully and may soon be restrained, often happily finishes the business, without raising any disturbance, heat, or fever in the system; which usually follow the use of aromatics, especially when joined with ardent spirits and other things of the like kind, which old women, according to custom, exhibit with a liberal hand, and generally to the great detriment of the patient.

There are other affections of the uterus which may be relieved by this remedy; but although they have fixed their ultimate seat in this viscus, yet they spread disorder through the whole body, and are to be considered as causes of a general effect: the fomes therefore, are to be removed from the general habit, before the uterus can return to its former healthy state. How far an emetic may be suited to this intention of cure, will be shewn hereafter.

Having thus considered the faults of the principal viscera separately, at least those which admit of relief from mechanical remedies, we must now consider the effects which respect the whole body, and enquire into the general changes produced by so great an operation.

49. Besides the large trunks of vessels which pass through the belly, and, bringing the blood from the extremities, carry it to various viscera, and, being formed into one, constitute the origin of the *vena portatarum*; there are still thousands  
of

of their branches, which creep through the viscera, and, making their way by various turnings, form many beautiful plexus of vessels, through which the natural fluids are constantly propelled. By vomiting, the situation, magnitude, and figure of the vessels, are every moment changed, so that an action arises altogether similar to the action of the lungs. But if we advert to the number of the abdominal vessels, and to the force applied to them and their contents by the efforts of vomiting, we shall see that this action far exceeds the powers and action of the lungs, and at this very time also, they act much more strongly than usual. We may justly conclude, therefore, that every part of sanguification is exceedingly promoted by it; that is, a union, densification, attrition, solution, and mixture of the fluids with the blood, is excellently promoted. These effects are also assisted by the increased velocity of the blood; for the arteries are compressed, as well those which go to the belly, as those dispersed to the limbs. Most of the muscles grow rigid with a slighter kind of tetanus in the very act of vomiting, as will easily appear to any one looking on a person in this situation. The muscles of the breast and shoulders support and fix the ribs; the arms stretched out, support the body, by which the muscles of the back are assisted in keeping the body bent forward in a convenient posture; the legs become stiff, and the patient, like an immoveable statue, waits with open mouth the attack of sickness and retching.

ing. The blood-vessels, therefore, which accompany the muscles, are equally subject to this pressure as those of the abdomen, and are affected with it in like manner: the diameter of the arteries is diminished, and the compressed fluid rushes out where a passage opens for it; the column urging on behind, prohibits a reflux, it must necessarily therefore proceed forward, and sooner reaches the veins. The coats of these are less rigid and more easily yield to external force; the same effect therefore takes place here, namely, the blood is compressed and pushed forward: the frequent valves forbid its return; it urges on its way therefore with greater velocity, and reaches the heart in a fuller stream; but, driven from hence with frequent repeated strokes, it hastens on to perform the usual rounds. From these things we clearly learn, 1. That sanguification is made better: 2. That the secretions are increased: 3. That the solids acquire new strength: 4. Lastly, That the momentum of the blood is increased, and, impediments being removed, the circulation becomes more free. But from these principles it will easily appear, what diseases τῆς μοχλείας δέοντες, require mechanical motion as a remedy, and why so many and such great effects are produced by vomiting, both on the fluids and solids. It will not, however, be foreign to our purpose, to shew their use in a few of these kinds of diseases.

50. The winter being past, the solids, before stiffened by the piercing frost, are again relaxed;  
but

but the fluids, propelled with less force by the enervated vessels, grow thick by the vernal heat, and on any slight occasion stagnate in the extreme vessels, the solids failing of their usual strength: the humidity of the air accumulates the forces, and the weak body, loaded with fæces, becomes liable to many disorders. Nature, perhaps, brings on a benign intermittent, which might soon shake off the troublesome load, and restore the body to health and vigour, if left to itself, and not disturbed in its course. But the complaining patient is urgent; he abuses the physician with hard speeches, and despising his advice, perhaps procures from some old woman an untimely relief, often accompanied with a thousand mischiefs. An emetic seconds the attempts of nature; and, if it does not radically extirpate the complaint, yet it expedites a safe way to health, (§ 32) and if repeated is useful. An autumnal intermittent seems no less to require the help of an emetic, as well to evacuate the foulness of the *primæ viæ*, as to correct the disorders which have a deeper root in the system.

51. Nearly allied to this, is a slow continued fever, greater in degree, arising perhaps from the same causes, and sometimes raging about the same time: the morbid matter seems more immoveable, and which can by no means be subdued or expelled by the slow work of nature. Hence there is no remission; yet the disease is not so violent, nor the heat extreme. Venefec-  
tion

tion evacuates, with the blood, the strength also, which in this species of fever is already too low. A gentle laxative is of little use, and a stronger purgative debilitates. 'Tis the business of the physician to favour and promote what nature has begun. We must therefore support the fever, that it may finish its attempts (otherwise too weak and useless) and concoct the crude, and expel the concocted matter, that it may not be hurtful to the body. "If there be coldness and torpor," says Celsus (*a*), "and restlessness, it will not be im-  
 "proper to give in the fever three or four cups of  
 "the *mulsum* (*b*), or diluted wine mixed with the  
 "food; for by this means the fever is increased, a  
 "greater heat arises, and removes the foremen-  
 "tioned symptoms, gives hope of a remission,  
 "and in that remission of a cure." But emetics perform all this. There is a strong force accelerating the motion of the spirits, (§ 18, 19); the *fordes* lodged in the bowels are evacuated, (§ 30); if the abdominal viscera are clogged with viscid matter, it is corrected and subdued, (§ 39); and lastly, the motion of the blood is quickened, and the thin secretions, (§ 49, n. 2, 3, 4,) are increased, especially those by the skin and surface of the body. Perhaps there is no method of promoting sweat, more efficacious or useful, than after an emetic has been exhibited; for not only a copious sweat is excited during

(*a*) Cels. med. lib. 3. cap. 9.

(*b*) Water and honey boiled together.

the operation, but the attenuated fluids are propelled so forcibly to the surface of the body, (§49), that, the obstructions being removed which block the cutaneous orifices, the humours determined hither rush out in a full stream. And here opiates are of use, which practitioners most judiciously advise after an emetic. Vomiting likewise cleanses the squalid foulness of the *primæ viæ*, and prevents the viscera from being injured when an hydrogogue is administered, and the fomes dispersed through the body.

52. The same doctrine points out the great use of an emetic in a thin acrid catarrh, in the humoral asthma, and other disorders of the like kind, arising from catching cold; when the matter of perspiration is retained, and so far loads the vessels with an inactive fluid, that all the functions suffer by it; when the senses grow dull with a stupid heaviness, and one would almost say that the body is literally heavier than usual; and lastly, when the distended vessels become painful, and the sensible parts are hurt; when these, and other like symptoms appear, a remedy must be exhibited, which may open the pores, expel the superfluous humours, and restore the body to its usual activity. An emetic is of great use for these purposes, in whatever part of the body the complaint, arising from these causes, may be situated. If we suppose that the glands, and other vessels about the fauces and neck, so much abound with a watery humour, that there are signs of an approaching defluxion,  
mechanical

mechanical force will be of use; for the face growing red and swelling, the eyes sparkling and filled with tears, the nostrils moistened with their usual fluid, and the glands of the mouth and fauces pouring out a rivulet of saliva and mucus; all which constantly accompany the efforts of vomiting; clearly demonstrate with what force the blood makes towards these passages, and the greatness of the attack on the obstructed vessels. For as the bony canals do not yield, and as the great arch and obliquity of ascent of the vertebral and carotid canals greatly break the force of the blood in its approach to the brain; so the tender flexible texture of it is in less danger from an emetic, the impetus being mostly determined outward, the increased force inwardly being but small. Hence partly, and from its stimulant and evacuating virtue, the reason will appear why a vomit is of so much use in a vertigo, hemicrania, and other like diseases; why it has sometimes been so useful in the epilepsy of old people, as writers of observation acknowledge: "I have known," says Hoffmann (*a*) "an inveterate epilepsy, which had afflicted the patient twenty years, cured by the use of emetics and specific anti-epileptics, taken from the animal kingdom." Nor am I unacquainted with similar histories; but the prescribed limits of my work forbid the relation of them.

53. The same reason renders it less necessary

(*a*) Hoff. *Dissert. decad. 1. p. 204.*



distinctly to relate their use in the small-pox; not only as they evacuate and turn the future mischief to some other part, (§ 30) but also on account of other effects which they possess, (§ 49) and the excellent changes which arise from them. Let us suppose the skin covered with pustules; and the small perspiratory vessels so compressed, that the usual strength cannot push forward the hard compacted matter: in this case the bulk of the contents of the vessels is increased; a febrile heat is so kindled in the interior parts, that the internal exhalent organs become dried, or otherwise so obstructed that they cannot perform their functions. On both accounts a fluid is retained, which has already undergone too long a circulation, and which by a longer delay would be productive of the worst effects; for too much heat produces acrimony, whence a stimulus is applied to the nervous parts; hence also arise febrile heat and thirst, perhaps delirium may supervene: from the increased bulk of the fluids anxiety infests the præcordia; the thick matter made fluid by heat is coagulated, and rendered more unfit for excretion through the organs which nature often points out for it, that is the fauces or intestines. These disorders require, in the exhalent vessels of both places, a resolution and evacuation of the coagulated matter, and fluidity to be produced in the rest, but so that the fever be no more increased than can be safely restrained by an opiate. Whoever recollects what has been said (§ 13, 18, 39, 49) concerning

cerning the effects of emetics both on the fluids and solids, will foresee that they are not improper remedies in this case, nay, perhaps the most proper. Sydenham, treating of acute fevers, says (*a*),  
 “ When I have sometimes happened carefully to  
 “ examine the matter thrown up by a vomit,  
 “ and have found it neither remarkable in quan-  
 “ tity, nor of very bad quality, I have admired  
 “ that the patients have received so much relief  
 “ from it; for, the vomiting being over, the fe-  
 “ vere symptoms, (viz. the nausea, anxiety, rest-  
 “ lessness, deep sighs, blackness of the tongue,  
 “ &c.) which tormented the patient, and terri-  
 “ fied the by-standers, were usually mitigated  
 “ and went off, leaving the rest of the disease  
 “ tolerable.” But from what has been said, it  
 appears that the thick fluids are dissolved, the  
 obstructed canals made free and open, the whole  
 body, dried and parched up, becomes moist, and  
 the hurtful matters are expelled; it is no won-  
 der therefore, that such sudden relief should  
 happen from it.

54. The advantages received from emetics in acute diseases being thus cursorily related, the way is paved to chronic complaints; in which the opportunity of giving relief is not so fleeting, nor experience so fallacious, though judgment and discrimination are sufficiently difficult. Vomits seem more especially opposed to those classes of diseases which have their origin and seat in the

(*a*) Sydenh. oper. § 1. cap. 4.

stomach, or viscera situated near it, which is the case with almost all chronic complaints; for the disorders arising from these parts are quickly dispersed through the system, and the effects of lost or broken health are returned on these viscera. This is no where more evident than in those diseases which are accompanied with loss of reason, and which happen from bad food, or some error in diet, as their proximate cause; for though they arise from passions of the mind, evacuations, or other remote causes, yet an improper method of living often constitutes the proximate cause. The innumerable branches of nerves sent off to the stomach, do not serve either for nutrition or motion only, but rather to promote chylication. The animal spirits, therefore, being dispersed in too great a quantity, one of the causes of health is lost; that is, the instruments destined to convert the usual quantity of food into the nature of our body, become unequal to the task; but the usual quantity being taken into the stomach, there necessarily arises indigestion, the source of other diseases. This is most frequently the origin of the hypochondriac affection, and sometimes of other degrees of defective reason, from the slightest to the highest pitch of madness. The phenomena of this disease shew that the fault is principally lodged in the fluids, and consists in too great a thickness of them, or a dissipation of the most volatile moveable parts---These are the animal spirits, the vaporose halitus of the blood, and  
lastly

lastly the watery elements of it; the greater or less waste of which makes the disease milder or more severe; whilst the blood passes through various degrees of spissitude, till at length it degenerates into a true bile, called by the antients *atra bilis*. What is known of the nature of this disease, is chiefly owing to chemistry; by the help of which, in this, as in many other disorders, many phænomena otherwise unintelligible, become evident. From the chemical analysis of the blood it appears, that the watery parts being evaporated, there remain a saline, an oily, and an earthy matter, variously combined together, but little fit for the functions of health, as being thicker and lighter than healthy blood. Chemistry likewise demonstrates, by experiments to be depended upon, that oil, salt, and earth, united together, contain more air than water mixed with the rest. The human calculus is an example of this; therefore the solids are too powerful for the fluids, circulate them too quickly, and the waste of the thinner part is increased, whilst the residuum growing thick, refuses an intimate mixture with diluents. The *ingesta*, not sufficiently concocted, add to the disease, obstruct the soft viscera, and weaken or destroy their action. Hence arise obstructions, tumours, and pains of the spleen, liver, and hypochondria. Health requires a restoration of fluidity and miscibility to the viscid part: this is obtained by diluents, saponaceous substances, and attrition. But the nature of the disease, as above explained, shews

shews that diluents alone are of little use; faponeous substances alone, though very efficacious, are seldom sufficient; but these aided by attrition and heat exert their whole force, as appears from chemistry. Lastly, attrition in this disease is seldom increased by the common stimulants, which are often found hurtful. It is true, they increase the celerity of the blood, but they increase at the same time its rarefaction. But it is found that attrition is in proportion to the celerity, solidity, and compression: if therefore the ratio of increased rarefaction, exceed the ratio of increased celerity, not only the attrition will not be increased, but on the contrary it will be diminished. A remedy therefore is wanted which may increase the celerity of the blood, and at the same time restrain its rarefaction. It easily appears, from what has been said, that such a remedy is found in the effort of vomiting.---Hence appears, by the bye, the utility of immersion in cold water.

55. A dropsy seems diametrically opposite to this disease; in which a serous lymph drowns the viscera, and the pallid blood deforms the body with a disagreeable colour, and shews that water abounds, and that, by a contrary fault, the oily, earthy, and saline parts are deficient.

A pituitous disposition having arisen in the fluids (which may happen from various causes, some of which the poet (*a*) has not unaptly described,

(*a*) Sammonicus.

*Corrupti jecoris vitio vel splenis, acerbus  
 Crescit hydrops: aut cum siccata febre medullæ  
 Atque avidæ fauces gelidum traxere liquorem:  
 Tum lymphæ intercus vitio gliscente tumescit,  
 Secernens miseram proprio de viscere pellem.)*

immediately the solids are so debilitated that they are scarce able to propel the torpid fluids. Hence stagnation in the lateral vessels, and languor of the functions. The serum is daily accumulated, swells, injures the neighbouring parts, and the causes of the disease are continually renewed. If this happens in one vessel only, an hydatid is formed: if κατὰ φλέβας, *along the veins*, or in the tunica cellularis dispersed through the body, a leucophlegmatia takes place: if a ruptured vessel pour its contents into some cavity, a local dropsy is produced: if, lastly, (which is often one cause of the disease) the action of the absorbent veins be debilitated, either from obstruction produced in them, or from mere languor and inertia of the solids, whilst the small arteries with open mouths perform their office, and pour their fluid from the drained body without end into a cavity; in this case the fluid being continually accumulated grows thick, and in a short time renders the vessels of all kinds unfit for their office, and produces a topical dropsy. In the cure of this disease the primary cause must be diminished or removed; attenuants, evacuants, exsiccants, and roborants of every order, must be used, that the humid load  
 may

may be removed, the water lessened, and the vessels so far restored to their strength, that they may perform their proper office, and the native healthy state of the fluids be renewed. To do all this, we find many remedies among practical writers. I know not how many celebrated specifics are mentioned by them which will carry off the disease almost at one stroke, if we are to give credit to their promises. Others are displeas'd with this short way of doing things, and relate a pompous farrago of remedies, and almost bury the patient under a heap of medicines. The practice of both is to be avoided; nor is the cure wholly to be left to emetics, nor yet attempted without them; seeing they shorten the labour, and perform in a compendious manner what would otherwise require many helps. Anti-hydronic remedies before mentioned, seem to produce their effect by exciting motion and attrition of the fluids, and by carrying off the exuberant lymph. A strong effort of vomiting often repeated, promotes all these at once. It opens the obstructed vessels, breaks down and propels the thick and stagnant fluids, dries up the humid parts, increases the watery secretions, renders compact the dissolved blood, and dissolves the viscid, carries the blood with greater velocity to the extremities, and promotes sweat. It also exerts a strong action on the tumefied abdomen; and, when the disease is wholly seated here and recent, the viscera sound, and the body not very old, the cure is safely finished by

repeated vomits with proper regimen and moderate exercise; except in persons, “who being  
 “ their own masters, cannot so easily be gover-  
 “ ned, as those who recover by the benefit of  
 “ being controuled (*a*).” In the advanced  
 stage of the dropsy, an emetic seems to be of no  
 small use. This is proved by a case mentioned  
 by Forestus (*b*), of a dropfical person, “swelled  
 “ in his belly, hands, feet and face; left by the  
 “ physicians, and at length despairing of a cure,  
 “ he went to the sea shore, and in a small vessel  
 “ went some distance on the sea; by which a  
 “ vomiting being promoted, and afterwards  
 “ using exercise, he was restored to health.”  
 I might here adduce the suffrage of Sydenham,  
 who, in his elegant tract on the dropsy, supports  
 his opinion of their usefulness by many exam-  
 ples confirmed by repeated observation: but the  
 more advanced in the art know well the elegant  
 words of the author, and the less advanced are  
 cheerfully recommended to the book itself, in  
 the reading of which,

----- *si propius stes*

*Te capiet magis; ----- et*

----- *decies repetita placebit.*

----- *if closer thou attend*

*It will strike thee the more; ----- and*

----- *a thousand times repeated will please thee.*

(*a*) Cels. Medicin. lib. iii. cap. 21.

(*b*) Observ. lib. xix. obs. 33.



But in this disease the cure is not to be committed to mechanical action, unless the viscera, and other circumstances, are as mentioned in paragraph forty-fourth.

56. From what has hitherto been said, it will clearly appear what effects may be expected from the action of emetics in diseases arising from a ferous colluvies. Their use also will appear in the rickets, a disease troublesome to children of both sexes, difficult to remove, and frequent. It is commonly produced by some fault arising in the abdomen, and propagated as far as the medulla; by slow degrees it digs into the very pillars of the body, and renders the hardest and almost inflexible bones too easy to be bent. The origin and progress of the disease, the curatory indications, and also the manner by which it may be relieved by repeated vomits, will clearly appear from the following observations (*a*).

1. The hardest bones in the body were once a moveable jelly, membranes or cartilages; which by degrees, growing hard through various degrees of solidity, at length become rigid bones.

2. There are two causes of this induration; viz. a secretion of a bony matter from the blood, and a firm apposition of the matter secreted, or a strong compression of the particles one to another. These are the effects of a complet vi-

(*a*) Vide Alex. Monr. Anatomy of the Bones, p. 34.

gour of the living powers, and the action of the neighbouring incumbent muscles. Therefore,

3. If the blood be not sufficiently stored with proper particles for the structure of the bones, a less secretion will be made, and less fit for the purpose of ossification. Moreover, if muscular action be deficient, and the strength languid, another cause of ossification is wanting. Hence, therefore,

4. It appears, that those conditions which can produce the rachitis, are all of that kind which usually deprave chylification and sanguification. Particular regard, therefore, must be had to these, and that kind of medicine be chosen, which may correct and remove the fault in its very formation, (§ 18. 27. 39); may mend the hurtful effects of it, beginning to appear in other places; and in the best manner relieve the defect of impetus and motion in the muscles, (§ 49.) Purgatives indeed happily carry off the saburra of the viscera; but if they are too strong, they debilitate much, and leave a thick but vapid matter behind, more apt to produce obstructions; and the solids, already too weak, they weaken farther. Emetics powerfully purge the viscera, are not so hurtful to the vital powers, and strengthen the solids; especially if an accurate regimen be observed, if the body be often immersed in cold water, and lastly, if the symptoms arising be sometimes moderated by specifics.

57. Whether a vomit be useful in attacks of the gout, to whom, when, and how often it ought to be exhibited, is not easy to determine. Those, whose authority I very much regard above most others, altogether dissuade from their use in the paroxysms, except nausea, vomiting, and other signs of the stomach being loaded with fordes, be urgent, and then they only admit the lenient emetics. But other physicians, (*a*) of no small note, are of an opposite opinion; and one (*b*) asserts, that “ he has seen the  
 “ usual attacks of the gout always rendered  
 “ more mild, when the *prima regio* has been  
 “ cleared of fordes, immediately at the com-  
 “ mencement of the paroxysm, by a gentle  
 “ emetic, either alone, or joined with a laxa-  
 “ tive.” Who is sufficient to decide these differences? As for me, dismissing these facts, I shall endeavour to demonstrate, in few words, the use of emetics in a different stage of the same disease; that is, between the paroxysms, in order to prevent the future. The acrid matter stagnating in the very fine passages, and exciting excruciating pains, is expelled after a gouty paroxysm (if the cure be rightly conducted, nor the efforts of nature checked by the untimely use of some external or internal medicine) a gentle sweat moistens the part affected; or, if the disease be of a still worse kind,

(*a*) Vide Dr. Cheyne's Essay on the Gout, p. 77, &c.

(*b*) Hoffm. Diss. Decad. i. p. 411.

having a deeper seat in the body, and producing tophi, an alleviation and remission of all the symptoms succeeding, shew the evacuation to have been critical: therefore a return of the fomes of the disease into the blood, and upon the parts appointed for the more noble functions of life, is by no means to be feared; but the rest of the disease is to be removed in the manner of any other more severe chronic complaint. If the fluids are depraved, they must be purged by alterants; the weak solids must be strengthened, the powers of the whole body be renewed, and the root of the cruel disease, as far as art can effect it, be cut up. For these purposes the *medicina gymnastica, or exercise*, is extremely useful; which, above many other helps, revives the weakened limbs with fresh vigour. Riding on horseback, or in a carriage, running, &c. are excellent helps. But how often does the unfriendly season of the year prevent these exercises? In the winter or spring the gout commonly abates, but is yet worse if it intermits in the autumn. For the air heavy and cold, wholly prevents going abroad; and the distorted joints, yet lame with the late pains, do but ill admit of standing long on the feet, or that the body be tortured with any kind of motion in-doors, or in some covered walk. Friction, in reality, does nothing more than slightly clean the external parts; it evacuates no pituitous matter from the viscera, which, for want of motion, necessarily begins to be troublesome. Nor are there want-

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ing to patients flattering companions, who know not how to give a dearer pledge of friendship, than by ruining their own health by drinking, and attempting the ruin of a man recovering from disease, whilst in words they wish him his usual health, but in reality take the means to destroy it. For these and the like reasons, an emetic is almost always very necessary to these convalescents; nor will it be difficult to collect from what has been said, in what manner it supplies the place of vigorous exercise. It appears also in what manner vomits assist the animal functions, how they concoct the thick humours, and lastly, more or less answer to every single indication. Nor are discerning practitioners afraid, twice a month, or sometimes oftener, to order a vomit to persons in this situation.---Having therefore, taken a view of their use in most chronic diseases, we intend slightly to run over the complaints which are troublesome only to the tender sex.

58. Not only the manner of living, but almost the very vital stamina, seem to have given a more soft lax temperament to women than to men; unless a harder lot in life may have imparted to them an unnatural one, and an healthy mind in a healthy body, hardened with severe labour, should have given them a firmness altogether imitating muscular force. There is however a stage of life in which the condition of women, from the least error, becomes liable to the worst mischiefs; that is, at the time the  
difference

difference of the sexes begins to appear, which is at or about the fifteenth year of their age: for till this time, in a medical sense, they are but one and the same genus or kind. But in what they differ, why, and what are the physical causes of this difference, is not necessary at present to explain, having been largely treated of by others. But a brief recital of these diseases, as it may serve for a more clear explication of this argument, seems not improper to our purpose.

1. The terminus of increasing bulk approaching, the same organs which have hitherto prepared nourishment for the body, still continue to prepare more than nutrition alone requires. The superabundant blood therefore now passes off periodically by the uterine vessels. If it be detained too long in the body, through weakness of the vessels, or by an obstructed passage, plethora is added to plethora, and the diseases of the sex presently appear.

2. If a watery dissolved or acrid blood pervade the uterus, and momentum or force be wanting to open the mouths of the vessels so far that they may deposit the red blood, it then passes into the lateral vessels, is poured into the glands every where placed in the cavity of the uterus, and becomes thick: at length there passes off a viscid fluid, different in colour, sometimes white (from which it has been called *fluor albus*) or whitish, scarce tinging a cloth; sometimes yellowish, greenish, blackish, and affected  
with

with every colour between these; sometimes it passes off without fœtor, sometimes it smells; sometimes it is mild, generally at first, but the disease continuing long it becomes more acrid, deeper coloured, and more fetid. The opening glands separate and throw off the thin humours of all kinds; amongst which are the nutritious, which ought to have given vigour to the solids, and momentum to the fluids. Hence strength declines daily, the limbs lose their power, digestion fails, a more indelible faulty state corrupts the fluids, and a disease creeps into the whole œconomy, than which (I have heard the skilful assert it) there is none among the whole troop of chronic complaints more cruel to the sex, more difficult to be cured, or more fatal in its effects; for the very instruments fail, by the help of which the other parts ought to be repaired, and the seat of the disease is in a viscus, to which, of all others, it is most difficult to apply a remedy. 'Tis true, it does not soon fail, but when once affected, it preserves its vitiated state long; because it is a part, says Forestus (*a*), “ which readily receives  
“ the excrementitious particles of other parts,  
“ both on account of its inferior situation, and  
“ the multitude of veins running to it, and  
“ also on account of the usual natural purgation.” Add to this, that its solid vascular structure does not easily yield to medicines, the

(*a*) Forest. Obs. lib. 28. obs. 21.

powers of which are weakened by a long circuit before they reach it. And after the disposition of the blood has been made better, the lax texture of the glands obstinately opposes a cure, and those medicines which are opposed to this softness, constrict the orifices of the arteries, and render menstruation more difficult. Native laxity, a bad diet, an inactive and luxurious life, generally produce this disease: for, as the same Forestus has observed, *country-women seem seldom affected with it*. These circumstances also often precede a suppression of the uterine flux (*a*). Such remedies, therefore, must be applied in these cases, as are opposed to diseases arising from causes of this kind; not omitting repeated vomits: for, besides the effects hitherto mentioned, of cleansing the stomach, stimulating the solids, and producing a wonderful attrition in the blood, they also propel it with such force to the uterus, that we find examples (*b*) where this mechanical force alone, in retarded menses, has produced an instant flow. And, unless the patient be *hard to vomit*, or can ill bear the action of an emetic, no less advantages are to be expected from it in the *fluor albus*, than in most other chronic diseases. But it often happens that patients in this disease are fatigued with the least motion; whence they receive more harm than good from

(*a*) Oper. Friend. page 67. 80.

(*b*) Plater. Obs. Med. p. 191.—Hildan. Obs. cent. 3. obs. 58.



a vomit. This, therefore, is first to be considered, before emetics be given to patients of this kind.

59. But there is nothing perfect and happy in every respect: emetics have their advantages, and also their disadvantages; nor are these less to be feared than those to be desired, if by chance the medicine be given improperly. But the unsuccessful events of a remedy no less shew the utility of it, than if the most desirable effects had taken place from it; they demonstrate its power, and prove its efficacy, whilst they convict the artist of unskilfulness and temerity; nor is the medicine to be accused of the death of a man, but the hand which improperly or untimely administers it. And though, from the doctrine of emetics already delivered, it may appear clear to the skilful, in what cases they may be useful, and in what hurtful, yet it will not be improper to close the present dissertation with a short account of the diseases in which a vomit is especially to be avoided.

1. The natural structure of the body is a reason with some writers (a) why emetics should not be given to some persons; those of a spare thin habit, long neck, narrow breast, and hard to vomit; and those subject to spitting of blood, fainting, or a troublesome cough; have been excused from emetics: but persons of a contrary temperament have often, by the advice of phy-

(a) Vid. Fallop. de purgant. p. 81.

ficians, experienced their salutary effects. In the use of the stronger emetics these circumstances certainly ought to be considered, lest perhaps we should fall under the censure of temerity or incaution; nor ought they wholly to be omitted in ordering a gentle vomit. *Idiosyncrasia*, or a peculiar dislike to some things, known to the patient from experience, but not discoverable by the physician, unless he has learned it from him, may forbid the use of this or that medicine, which otherwise, given by one not knowing it, would produce many mischiefs.

2. In inflammatory diseases, when the blood is polluted with a parched lentor, and, unfit to pass through the extremities of the arteries, stagnates, and must not be urged by force; as in acute fevers, topical inflammations, the pleurisy, frenzy, inflammation of the liver, and the like; the vital powers must rather be diminished than increased; therefore, the accession over, and violent pain urgent, an emetic will not be safe.

3. Nor, if the action called tonic, of any viscus or part be much injured, or if the just force, by which the solids ought to re-act on the fluids be much lessened, ought we to try the mechanical force of a strong emetic, before regard be had to the part, whether it can bear to advantage an attack of such great violence, or whether it will not suffer a greater inconvenience from it. For example; in a dropsy of the belly an emetic carries off the water, but for a time at least it increases the swelling.

4. The

4. The action of emetics is certainly great on the lungs, because in the effort of vomiting, an unusual quantity of blood is passed suddenly through them, by which the vessels are distended, the vesicles compressed, on which the air retained within re-acting strongly, renders the pressure much more strong and powerful; and if the gaping vessels have before let out the blood, the small wounds being almost certainly enlarged, will increase the hæmoptœ. In an incipient hæmoptœ also, produced by some external cause, while the blood is yet bland, nor contaminated with any sordid corruption, we can scarce have recourse to an emetic; by which the latent cruor, corrupted by stagnation, is expelled the vesicles of the lungs, and may increase the disease otherwise not very dangerous. Emetics, therefore, can scarcely be given to persons affected with pulmonary complaints, unless where an inundation of pus has overflowed the lungs, and death otherwise inevitable, be threatened from suffocation.

5. Lastly, we must carefully abstain from their use in those diseases which are caused by much thick blood, a copious very tough pituitous matter almost immoveable, or any other matter of the like kind, afflicting the brain and origin of the nerves, as in the more severe kind of apoplexy, paraplegy, hemiplegy, in the lethargy, carus, and the like; for commonly they fix the disease deeper, and in a very strong operation they destroy life. It is scarce necessary to  
dissuade

dissuade from the use of emetics when there is yet danger of an hæmorrhage after a limb has been wounded or cut off, though some symptoms might seem to point them out as necessary; or lastly, when by large abscesses, or by any other opening, a great shock being given to the system, the patient would bleed to death.

**T**HE following *Essays on the Weather and Diseases of London in 1751, and the three subsequent years, were originally inserted in the Gentleman's Magazine, commencing with the 21st volume. They were deemed worthy of selection here, not merely as blossoms presaging fruit, but as ripened fruit itself, fit for immediate service. It is, indeed, to be regretted, that such periodical communications were not longer continued, in a city, which affords, undoubtedly, the most multifarious observation.*

Editor.



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O N

WEATHER AND DISEASES.

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*Mr.* URBAN,

**I**F the inclosed account of the weather should appear to be not unworthy of a place in the *Magazine*, nor be disapproved of by the ingenious part of the faculty, it will induce me to proceed in furnishing some short remarks of the like nature once a month, whilst health and leisure permit. I shall say nothing at present of my motives to this essay, or insist upon its utility. I shall only observe, that the barometer I use is a good one; and the thermometer is graduated by Fahrenheit's scale, and made by a workman of established character: it is suspended at about two inches distance from the wainscot, in a room where no fire is ever kept, nor does the sun shine into any part of it above two hours in a day, nor then within some yards of the thermometer; above it is a wide staircase, and a door opens out of the room where it is placed into an airy court almost every half hour in the day.

The direction of the wind is not always so exactly put down as I could wish, from the restif-

ness of the neighbouring vanes; nor is its force, or the measure of rain, determined any other way than by conjectural estimation.

I am, &c.

*Of the Weather in April 1751.*

The temperature of the air in respect to heat and cold, during the whole of this month, hath been surprizingly equal, notwithstanding the wind has blown from almost every point of the compass. The lowest degree to which the mercury in the thermometer fell was 43, the 2d inst. with a clear cold wind from the N.E; the highest it arose to was 57, the 24th, the weather fair, warm, serene, and the wind south: so that during that period the weather varied only 14 degrees, from one extreme to the other, and this in so slow a manner, that the mercury did not rise or fall quite 4 degrees in any day of the time.

The motion of the quicksilver in the barometer, has been still more confined. It stood the 26th of last month at 29 inches one tenth, the wind westerly, and much rain; and rose by degrees to 30, the 8th inst. the weather moderate, fair, clear, wind N. E. this was its highest ascent; the extreme variation 9 tenths. Its greatest rise on one day was the 26th, when it rose from 29.1, to 29.4, the wind westerly and high. Its greatest fall was 3 tenths, on the 13th, the wind changing from north to south; an equality which would scarce have been expected.

Great



Great quantities of rain have fallen during this month, sometimes in heavy sudden showers, sometimes in long-continuing rains; and such has been the tendency to wet, that we have had showers frequently with a north-east wind. The 15th, 16th, 17th, and 18th were fair and mostly clear: besides this short season of fine weather, it has scarcely been fair 48 hours together, the whole month. The wind was some days pretty high and stormy; there was one sudden storm of hail the 21st, and some frosty mornings about the same time.

The whole of the month may be said to have been wet, though moderate; and rather cold for the season, than remarkable for any thing else.

With respect to diseases, the only one that I have seen that has looked like an epidemic, is an insidious species of peripneumony. The sick complain first of chillness, shivering, and general pains, frequently of the limbs, then of some part about the thorax, but this last never acute, not often with a cough, and sometimes without much difficulty of breathing. They frequently complain of pain upon sneezing, coughing, or even swallowing, on one side of the neck, just above the place where the middle of the mastoid muscle takes its rise from the clavicle. This is often acute, and where it is so, from an instance or two I have seen, seems to afford a bad prognostic. The patients can lie easy in one posture, which is commonly upon the back, but not on either side. They have, or affect to shew, great

composure and ease, which imposes on those about them, till they are suddenly alarmed with some unexpected alteration, which carries the patient off in a short time.

The blood is commonly fizy; the urine crude or turbid, without a fair sediment; the pulse quick, small, at length weak, and with a remarkable jerk; the tongue moist, and drinking is rather fatiguing than pleasant. Early bleeding, gentle antiphlogistic purges of sal cathart. and manna in the pectoral decoction; cupping on the side, with blisters, mild diaphoretics, and pectorals intermixed, have in some cases been successful.

As to consumptions, they are rather endemic than epidemic here, though this month most commonly is fatal to many who are exposed to them.

Should this imperfect essay be favourably received, the author will endeavour to continue it with care and assiduity.

*Observations on the Weather, &c. in May 1751.*

The weather continued cold, dark, and rainy, as in the preceding month, till the 18th of the present, in which time it was seldom fair above 24 hours together; very often it rained, without intermission, great part of the day and night, with the wind varying from S. E. to S. W. or N. W. About the 18th the weather became

became fair and clear, yet cool, the wind mostly N. or N.E. with a few very slight showers.

The mercury in the barometer kept about 29.6 tenths at a medium: during the first part of the month it sunk to 29.2, the 3d inst. with much rain, wind S.W. and rose by slow advances by the 18th to 30.4. where it continued several days, wind N. and N.E.

The variations in respect to heat and cold, have been more considerable. The mercury in the thermometer continued almost stationary between 49 and 58, till the 9th, when it sunk from 52 to 47, viz. 5 deg. (its greatest variation in 24 hours, any time this month) the wind N.W. with a pretty sharp frost, which was felt in many distant places in the country. The north-west parts of Yorkshire had much snow, the earth was frozen hard, and thick ice was on the water. From this time the weather became somewhat warmer, the mercury sometimes rising to 58, and on the 21st and 22d at noon to 64, the air serene and vernal.

The same diseases continued during the rainy season; intermittents, both tertians and quartans, likewise appeared, and some obstinate rheumatisms, but none of them attended with any unusual symptoms, or requiring any method of cure different from what is commonly put in practice.

Though it is out of course, it may not, however, be altogether improper to observe in this place, that the winter in general has been re-

markably wet and cold; that diseases of the breast have been more frequent than any others, and these chiefly such as manifestly arose from a *serosa colluvies*.

The small-pox was uncommonly mild in general, few dying of it, in comparison of what happens in most other years. Great numbers of children had the whooping-cough, both in London and several adjacent villages, in a violent degree. Strong, sanguine, healthy children seemed to suffer most by it; and to some of these it proved fatal, where it was neglected, or improperly managed in the beginning.

For though nothing seemed to avail much in carrying off the disease, but change of air, with asses milk and proper diet; yet in constitutions like those above described, if a vein was not opened, sometimes oftener than once, with blisters, manna, oxymel scilliticum in small cinnamon-water, given frequently in small doses, the incessant cough brought on inflammations in the lungs, sometimes of greater, sometimes of less extent, in proportion to the fulness of the vessels, and the disposition to inflammatory disorders.

A strong healthy child, betwixt two and three years old, was seized with this disorder in a violent degree: he was sent into the country, the season cold and wet, where his disorder continued without abatement, having no medical assistance. In about a month the cough became less severe, but a continual feverish heat succeeded,

ceeded, with difficulty of breathing, a short, troublesome, but not convulsive cough, a quick, feeble pulse, and loose greenish stools, or else a tendency to costiveness. After three weeks illness, various methods were put in practice to assist him, but in vain; his fever increased, with some irregular remissions, and his breathing became more difficult till he expired, after about six or seven weeks indisposition.

Upon opening the body, the lungs on both sides were found full of matter, not collected in abscesses, but dispersed and hardened throughout the whole substance of the lobes, in the lower edges of which it was so closely impacted, and in a manner indurated, as to resist as much in cutting as the firmest glandular substance in the body.

On viewing the condition of the viscera in the lower belly more attentively, some of the contents of the stomach were found floating in the left hypochondrium, being part of an oily draught unaltered: it was judged that some slight wound had been made in the stomach, though the knife was conducted with the utmost circumspection; but the opening was soon discovered to have been made by another cause; that part of the bottom of the stomach which lies next the spleen, about the breadth of a crown-piece, was in so putrid a condition, as scarcely to bear the slightest touch, yet without having its colour much altered. The intestines were almost transparent and exanguious, and the colon  
larger

larger than the stomach; the gall-bladder full of a yellowish serum; the spleen small and harder than common; every thing else was found. It must seem a little remarkable that the child had no vomitings, no *singultus*, or any symptom from whence it could be discovered that the stomach was particularly affected, unless we attribute to this cause a great unwillingness in the child to be moved, and at one period of the disease a total refusal of liquids or other sustenance; but this went off a few days before he died, during which time he took every thing with a kind of greediness. This case has been more prolixly related than perhaps is suitable; but 'tis done for the sake of precision, which is always necessary in regard to facts with which it is of use to practitioners to be acquainted.

*Observations on the Weather, &c. in June 1751.*

The motions of the quicksilver in the barometer have, in this month, been confined within narrow limits: twice it subsided from 30. and 30.1; (the point where it was generally stationary during the last month) to 29.6, viz. on the 28th ult. and the 16th inst. the wind being westerly, with rain. It rose about the 3d to 30.3, and continued there a day or two, the wind E. and N. E. which was its greatest ascent. The variations in the thermometer have been more considerable. The mercury stood at 53, the  
26th

26th ult. its lowest point, and where it had remained almost stationary during the preceding month; from whence it rose by slow advances to 60, about the beginning of this present. And on the 5th, 6th, and 7th, the mercury stood at 68, at seven in the morning, the usual hour of observation; though by noon it arose to 73. But as these notes are intended to point out the general temperature of the air, the effects of the mid-day sun are not always mentioned. For though the sudden changes of the air, without doubt, affect the animal œconomy, as certainly, and as dangerously, as the more equal procedure of a malignant season, yet it is not every gleam of heat, or sudden chill, that can produce such effects.

An account of this kind would however be imperfect, were no notice taken of the sudden alterations; and this, perhaps, may have induced some writers to give their journals entire to the public: but it seems quite sufficient for every medical purpose, to mention only the greatest variations that have happened in the space of 24 hours, on either of the instruments above mentioned; which variations have in this month been very moderate, 4 degrees in the barometer, 5 in the thermometer, having been the greatest in one natural day.

As the preceding months were cold and wet, this hath been, for the most part, warm and dry; there having been fewer rainy days in this month than fair ones in the former, though the  
wind,

wind, excepting about 10 days, was generally S. or N. W.

The diseases that have chiefly appeared in this month, were the fore-throat, which was, some years ago, epidemic; and a slow remittent fever, of which some cases have occurred since the warm weather came in.

The former was treated in the method which was generally found beneficial when it raged before, and with success; the latter, when neglected at the beginning, which, from the mildness of its symptoms, most frequently happens, too often proves fatal. The sick find a weariness, head-ach, and stupor, with pains in the limbs, sometimes in the side, but not acute: they have slight shiverings, succeeded by heats, but not often vehement: the complaints increase as night approaches, but are easier the next morning after a sweat, which in some is profuse: thus they continue several days, often without the least apprehension, till on a sudden those about them are surprized with the appearance of imminent danger.

Moderate bleeding, gentle diaphoretics, and, in some cases, small doses of the bark, would probably have prevented those difficulties, from whence too often no art can extricate them afterwards.

It may not be improper to observe, that the town in general has been and continues very healthy, as appears both from the accounts of such as cannot be unacquainted with this circumstance,



cumstance, as well as from the weekly bills, if their testimony may be in the least relied upon. According to these the burials have been decreasing several weeks, and by the last, amount to no more than 298, than which, it is apprehended, few can remember to have seen them lower at this time of the year. That these bills are not correct, is not entirely the fault of the company of parish-clerks, who, it seems, want power to compel those who ought to be under their direction to do their duty. But wherever the omission is, 'tis pity but it was rectified, since nothing would contribute so effectually to demonstrate the influence of the seasons on human bodies, as a just and regular account of those particulars, which properly make a part of the bill of mortality.

*Observations on the Weather, &c. in July 1751.*

The weather in this month may be said to have been warm and wet, it having rained more or less on 24 days out of 30; on some of them very heavily, and during a considerable part of 24 hours.

The wind was for the most part S. W. and the sky frequently cloudy when it did not rain; the air temperate.

The mercury in the barometer sometimes sunk to 29.4. and one day rose to 30.1. viz. on the 9th, the wind E. But it generally kept

kept between 29.7. and 9, not varying above six tenths of an inch in the whole month, nor shifting above two of these in one day.

In the thermometer the motions of the quicksilver were as limited as in the barometer. Twice it sunk to 59, viz. on the 26th ult. and the 19th inst. On the 10th, 11th, and 12th, it stood about 64 and 5, its highest ascent, at the usual hour of observation; for at noon it rose to 72, on the 10th, the warmest day this month; wind E.

As the variations in respect to heat did not exceed 6 degrees in the whole month, so no two succeeding days differed from each other above 3 degrees, a greater equality than is common to be observed at this season; to which cause, very probably, and to the moist temperature of the air, may be ascribed the uncommon healthiness of the town, and, as far as I can learn, of many parts of the country also.

*Observations on the Weather, &c. in August 1751.*

Barometer.

Highest  $30 \frac{3}{10}$ , the 24th inst. Wind N. E.

Lowest  $29 \frac{4}{10}$  27th ult. S. E.

Common station about  $29 \frac{7}{10}$ .

Greatest variation in one day  $\frac{3}{10}$ .

Thermometer.

Thermometer.

Highest 64 degr. 5th inst. Wind S. S. W.  
 Lowest 57 25th. N. E.  
 Greatest var. } 3 -22d { from } N. W.  
 in one day } { 61 to 58 }

Common station 61 degrees.

It is scarcely possible to meet with a more equal temperature of the air in any climate, than has here been observed, during this last month; the wind has, for the most part, kept betwixt the South and West points, till within these few days. The first and last weeks of this period were moderately warm, with several fair days. The middle part of the month was likewise moderately warm, but wet; and, excepting a very few days, the whole month rather cloudy and overcast.

As it seldom happens that there is any remarkable increase of mortality, without some very sensible change in the temperature of the air preceding it; and as the alteration in the weight of the atmosphere did not exceed nine tenths, nor the heat of it vary above seven degrees, in the whole month; it is the more difficult to account for those fluctuations in the weekly bills in this period; the numbers having fallen from 306 in one week, to 224 the next, and again rose to 304, without any manifest reason. And though it would not be candid to attribute any part of this to want of care in the compilers of the bills, without good evidence,

evidence, yet one cannot but wish that all possible care might be taken to bring in their accounts as regularly as possible; otherwise the main end of an institution, capable of being highly beneficial to society, must not only be defeated, but mistakes and prejudice be thereby occasioned.

*Observations on the Weather, &c. in September 1751.*

Barometer.

Highest  $30\frac{3}{16}$ , 25th ult. Wind, N. E.  
 Lowest  $29\frac{3}{16}$ , 19th, at night, with thunder,  
 lightning, and heavy  
 rain. S. E.

Greatest variation in one day }  $\frac{6}{16}$ , from  $30\frac{2}{16}$  to  $29\frac{6}{16}$ , { N. W. to  
 the 30th ult. { S. W.

Common station about  $29\frac{8}{16}$ .

Thermometer.

Highest 62, with much rain, the 20th, Wind S. E.  
 Lowest 50, fair and frosty, 9th, N. W.

Common station about 57.

Greatest variation in one day } 6 deg. viz. 59 to 53 { S. W. to  
 N. W.

During the first part of this month, the weather was moderately warm, clear, and fair; from thence it changed to cool, windy, and wet; and continued so till towards the conclusion, when it became more temperate, and inclined to fair, though with some gusts of wind,



The variations in respect to heat and cold, as well as the weight of the atmosphere, have been very inconsiderable; much less than in the preceding months: to this perhaps may be ascribed the share of health which the town enjoys; the weekly bills in the first week being 317, in the second 373, the third 292, and the last 358.

A slow continual fever, beginning with acute pains in the forehead, extending to the eyes, with scarce any perceptible rigors preceding; a quick, soft pulse, not much heat, a moist tongue, crude urine, moderate sweats, but easily rendered profuse, made its appearance about the beginning of the month, though many were not affected with it, and few mortally: bleeding eased, but did not remove the pains in the head; blisters were of use; mild diaphoretics and cardiacs, in small doses, kept up the pulse, and afforded great relief; large doses, especially of the volatile kind, occasioned restlessness, thirst, a dry tongue, copious sweats, and high-coloured water, however plentifully the sick took diluters. Those who recovered appeared to grow better about the 14th or 15th, the water depositing a copious sediment of a yellowish colour.

The malignant sore-throat affected several, both children and adults, some of whom had large hard tumours on each side of the neck externally; where these appeared early, and were very large, the sick were in great danger, and if they recovered, the amendment was slow and tedious.

*Observations on the Weather, &c. in November  
1751.*

The weather in this month has been unusually tempestuous, and more variable than in the preceding. The last concluded wet and cold, the present began cold and frosty, and continued so till the 12th; the wind shifting then from N. E. to the Southward, brought rain and a warmer air; and from that time to near the conclusion of the month, we have had frequently very high winds, and heavy rains with some snow; with respect to cold, variable but not immoderate\*.

Barometer.

Highest  $30\frac{5}{10}$ , 5th inst. frost. Wind N.

Lowest 29.0, 19th, heavy rain and snow.

Greatest variation in one day  $\frac{4}{10}$ , 19th inst.

Common station about  $29\frac{5}{10}$ .

Thermometer.

Highest 54, 26th ult. Wind S. E.

Lowest 42, 3d inst. clear, very cold. N. W.

Greatest variation } 8 deg. { 28th, 54 to 46.  
in one day } N. W. high.

Common station 47.

The conclusion of the last and the beginning of the present month were moderate, and the weekly bills very little affected. After the cold frosty weather set in, the burials increased from

\* On the 21st was snow, hail, much lightning and thunder.

319 to 395, and kept up nearly to the same number the week following. A more temperate moist season succeeding, reduced them to 338. It has been frequently observed, and as far as the bills may be depended on, is demonstrable, that an excess of wet, with moderate warmth, is not so injurious to our constitutions, as a severe cold season.

*Observations on the Weather, &c. in December*  
1751.

The weather in this month was variable: the greatest part of it was fair, frosty, dark, foggy, and cold; the wind northerly: the latter part of it was wet, and, with respect to cold, moderate; the wind generally W. or S.W. The weekly bills, which were very low in the last month, increased with the cold weather, and sunk again as it became more temperate.

Barometer.

Highest 30.4, 30th ult. Wind North.

Lowest 29.5, 20th inst. Wind S.E.

Greatest variation in one day  $\frac{3}{16}$ .

Common station, 30.

Thermometer.

Highest 51, 21st inst. Wind S.E.

Lowest 37, 4th inst. thick fog. N.

Greatest variation in one day 6 deg.

Common station 44.



In the preceding month the small-pox began to make their appearance more frequently than they had done of late, and became epidemic in this. They were in general of a benign kind, tolerably distinct, though often very numerous. Many had them so favourably as to require very little medical assistance, and perhaps a greater number of people have got through them safely than has of late years been known; for the truth of which remark, the writer refers to the experience of practitioners. And as the small-pox, of all the diseases mentioned in the weekly bills, is, perhaps, the only one of which we have any tolerable exact account, it being a disease which the most ignorant cannot easily mistake for another, it may not be improper here to subjoin the amount of the general bills, and the numbers of those who died of the small-pox during the four last years.

	Total Amount.	Small-pox.
In 1748,	23,869.	1789.
1749,	25,516.	2625.
1750,	23,727.	1229.
1751,	21,028.	998.

And here one cannot but regret the present defective method of compiling these bills; the list of diseases is itself absurd in several instances; and the persons who are to assign a name to the disease of which any person died, are the least qualified perhaps of all others to do it properly. It is needless in this place to point out to phy-

ficians the benefits that would most probably accrue to the science they are conversant in, from faithful histories of the air, and the most obvious mutations in respect to its qualities, together with correct accounts of the several diseases of which those died whose deaths are registered.

It would likewise take up too much room in this place to describe the uncertainty to which those are exposed, who would form any useful or precise ideas from the present bills; it may not, however, be improper to wipe off one unjust aspersions, which from these very bills is cast upon our country by foreigners, at least, so far as any thing of this kind can contribute to it.

The three most capital articles in our general bills, are Consumptions, Convulsions, and Fevers; under which last article are commonly ranked, not only common inflammatory fevers, but every other species that is usually enumerated; yet the number of those who are said to die of fevers seldom equals, very seldom exceeds the number of those who are said to die of Consumptions; nay, it is much the most common for these to be as four to three of Fevers. Hence foreigners, who are ignorant in what manner our bills are compiled, give it out, that a Consumption is the grand endemic of England; and conclude, unjustly, that, as scarce any disease is known to be more affected, either for the better or the worse, by the air than this is, the air of England must most certainly have something in it

it extremely pernicious, as a disease, so much depending on the state of the air, is so frequent among us: whereas, in fact, the truth of the case appears to be this: the searchers are commonly two as poor and ignorant persons as the parish affords; these are to see all dead bodies, and to report to the company of parish-clerks of what disease they died: if the body is emaciated, which may happen even from an acute fever, 'tis enough for them to place it to the article of Consumptions, though the death of the party was perhaps owing to a disease specifically different; and thus a monstrous account is framed by the ignorance of the searchers, to the disgrace of our country, and even so far as to discourage some foreigners from coming among us.

It may be also observed, that from the same cause springs another absurd effect, which is the article of Convulsions. 'Tis not uncommon for persons who die of very different distempers, to have some convulsive motions before they depart; in fevers of various kinds, nothing is more common: yet if any thing of this nature is hinted at before the searchers, or they make any inquiry and find this to be the case, the dead are immediately added to the article of Convulsions. Of these facts the writer has known a multitude of instances; curiosity at first, seconded by an inclination to contribute all in his power to rectify so flagrant an abuse of an institution designed for, and still capable of, very beneficial

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purposes,

purposes, having engaged him in some enquiries of this nature.

From comparing the accounts of the weather given in the preceding months, it will appear, that the seasons, excepting a greater tendency to rain than has happened for several years past, have been uncommonly moderate; no extremes of heat or cold, nor any great or sudden changes, in respect to either of these qualities. This may, perhaps, in a great measure have contributed much to the healthiness of the year in this metropolis, it having been before observed, that no weather is in common so little productive of acute and fatal diseases, as the warm and the moist, nor any so dangerous in these respects as the opposite; and may at the same time account for that remarkable addition to the article of coughs and hooping-coughs, which appears in the present year compared with the preceding; the account whereof is as follows:

Died of the cough and hooping-cough	}	In 1748,	150.
		1749,	82.
		1750,	55.
		1751,	275.

It may likewise be farther observed, that, according to the sum of the last bill, the chronic diseases are more numerous in proportion than the acute, these seeming to have diminished in a somewhat greater ratio, and that probably for the reason before assigned; viz. that moist and moderately warm seasons are the least of all disposed

posed to produce acute diseases. For as to the hooping-cough, it may rather be ranked among the chronics, it seldom proving fatal in a short time, when so it terminates.

*Observations on the Weather, &c. in January 1752.*

Barometer,

Highest 30. 4.

Lowest 29. 0, 14th. High wind, S. **Rain.**

Greatest variation in one day  $\frac{2}{16}$ .

Common station 29. 5.

Thermometer,

Highest 51 deg.

Lowest 42 deg.

Greatest variation in one day 4 deg.

Common station 45.

The barometer in this month has afforded an unusual phenomenon, which is worthy of notice, and especially as the cause of it is since come to light. In the conclusion of the last and the fore part of this month, the quick-silver stood mostly above 30 deg. with a northerly wind. It sunk about the middle of the month very low, with the wind at S. E. and S. W. viz. to 29, and rose but a degree or two during ten days, though the wind shifted to the north-east, and kept northerly all the time, with dark, cold, moist weather, some rain, and now and then a slight appearance of snow.

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What is most singular in this case is, that the quicksilver should sink so low, and continue there so steadily, with a wind that commonly raises it to 30 deg. at least, that is, a full inch higher, unless great quantities of snow fall at the same time; but as very little of this appeared about London, the observer was at a loss to account for it any other way than by supposing that in the north something unusual must have happened, of which, indeed, he was soon after informed (a).

The variations, in respect to heat or cold, have been very inconsiderable; the mercury having traversed only nine degrees during the whole month, and only four of these in any one day. But to the senses the weather seemed much more variable, it having been in general a dark, moist, cold, and unpleasant month.

A distinct benign kind of the small-pox con-

(a) Extract of a letter from Richmond in Yorkshire, dated the 21st instant.

—The snow began to fall the 15th, and, save a little intermission the next morning, hath continued falling ever since; and though we have a strong north-east wind, which drives the snow into hollow, sheltered places, yet in the middle of a plain field, into which I got with some difficulty this evening, to measure the depth of the snow, I found it to be 27 inches deep, very heavy, and close. If it had fallen light, and with little wind, it must have lain above a yard deep upon the plain ground, which is more by above one half than most people here have ever seen, and it still continues snowing.



## Thermometer.

Highest 51, 24th inst. Wind S. E.

Lowest 38, 24th inst. Snow, cold. N. W.

Greatest variation in one day 5.

Common station 45.

The wind during this month kept generally betwixt the S. E. and N. W. points, seldom continuing in any one, two days together. As in the preceding month the quicksilver sunk unusually with a northerly, so it has kept up with a southerly wind in as remarkable a manner, though the cause has not hitherto appeared so evidently.

The weather has in general been inclined to fair, clear, and temperate, though interrupted with some smart frosts, heavy rains, snow, and hail; but these were of short duration.

The small-pox continued to be the principal epidemic of the season, though in general of a benign kind. Children, and young persons, unless the constitution is very unfavourable, get through it very well, and the height to which the weekly bills are swelled, ought to be considered in the present case as an argument of the frequency, not fatality of this distemper. For from what has occurred to the writer of these observations, as well as what he has been able to learn from some of the oldest practitioners, this disease has seldom, if ever, been known to be more general, or so mild and favourable as it is at present.



The practice of inoculation seems to gain ground considerably, and is generally performed in the manner described in vol. xxi. p. 123. Could those who are employed in this affair be prevailed upon to communicate authentic accounts of their success, they would do an essential service to the public.

*Observations on the Weather, &c. in March 1752.*

Barometer.

Highest 30.  $6\frac{1}{2}$ , the 27th and 28th ult. Wind N. W. clear and cold.

Lowest 29. 3, the 15th, with storms of wind S. W.

Greatest variation in one day  $4\frac{1}{2}$ .

Common station about 30.

Thermometer.

Highest 55, 10th inst. Wind S. E.

Lowest 39, the 6th, frost. Wind N. E.

Greatest variation in one day 6, the 13th, from 50 to 44.

Common station 47.

The weather in this period has been variable and inconstant: the conclusion of the last month was fair, cold, and frosty; the fore part of this inclined to warm and fair; the middle wet and tempestuous; and the last inclined to cold, with storms of wind, rain, and hail. The diseases have been the small-pox chiefly, rheumatism, and

and of late a few remittent fevers, affecting the head violently at the first attack, and very early occasioning unfavourable appearances.

The small-pox continue to be mostly benign, often of the coherent kind, especially in adults, and a few have the confluent. In these the spitting is commonly very copious, and so fatiguing as to prevent the patient from enjoying any rest or quiet; occasioning an early tendency to a delirium, and hindering the swelling of the face. Under these circumstances, small doses of some warm anodyne, such as *theriac. And. & conf. Damocrat.* from gr. 15 to  $\text{ʒj}$  or  $\text{ʒss}$  at a dose, once in 6 hours, have afforded great relief, and rendered larger doses of a pægoric at night less necessary for some days; the spitting becomes less troublesome, the face swells, the pulse grows full yet soft, and the oppression, of which under this circumstance they often complain, is relieved. In the present constitution at least, it will perhaps be found true, from the most impartial and accurate observations, (and such only ought to be admitted into medical records) that the danger will be in proportion to the spitting, and that it is expedient to restrain this discharge, and to divert the flow of it to the skin, by small doses of opiates. It should be remembered, that this remark relates to the present constitution; and that it may not always hold good, that we should endeavour by warm anodynes to suppress a discharge, which has heretofore been considered as a peculiar advantage.

tage. It should only put us upon observing the *juvantia* & *ledentia*, with the utmost attention, and to act as reason and experience direct.

It seems likewise necessary to remark, that there is a possibility of occasioning great detriment to the patient, by purging too early in this distemper. If the disease is benign, and the crop of pustules not very large, no inconvenience seems likely to arise from waiting till they are in general dry, not only on the face and trunk, but even on the extremities. And it is not altogether improbable, but that some of those disorders proceed from this cause, which are intended to be shunned by early purging. 'Tis well known that the power of absorption seems to be increased after purging. If this be the case, while the body is covered by a putrid crust, or by any quantity of putrid moisture, a larger quantity must be received into the mass of blood, must render it acrid, and occasion hectic heats, or be deposited in particular collections, and form abscesses, boils, and other inconveniencies or distempers. And, notwithstanding the authority of some respectable names, it is not a matter out of doubt with some, how far purgatives may be beneficial in that stage of the distemper, wherein they have been so warmly recommended.

*Observations on the Weather, &c. in April 1752:*

Barometer:

Highest 30. 4. Lowest 29. 2, the 25th inst.

Wind S. W. with rain and hail:

Greatest variation in one day 2.

Common station 30:

Thermömeter:

Highest 56. 56. Lowest 42:

Greatest variation in one day 5:

Common station 51:

The weather at the end of the last month was frosty, clear, and cold; at the beginning of this, it became more moderate, grew cold and wet towards the middle, and again cleared up towards the conclusion, with some sudden gusts of wind, and rain, and hail. But in general the weather, during this month, may be said to have been remarkably even, and from its sensible qualities not likely to give birth to any particular distemper.

The small-pox continued to be the principal epidemic during this period, as it had been in the preceding months; during which time it attacked most of those who had not hitherto had the distemper, and is now spread into the suburbs, and the neighbouring villages, but still in a favourable way in general. Some have the confluent, a few the bleeding kind; but these are not very common, considering the number  
of

of those who are seized with it. After bleeding where it was indicated, and cleansing the stomach with an emetic at the first attack, mild cathartics, with small doses of anodynes, succeeded much better than the cooling antiphlogistic regimen, which commonly occasioned languors, increased a troublesome, unavailing ptyalism, and retarded the eruption, and progress of maturation.

Several were seized with a remittent fever, accompanied with acute head-achs, restlessness, and anxiety, a quick full pulse, without much thirst, which generally soon gave way to bleeding, emptying the first passages, and gentle diaphoretics.

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THESE observations on the weather have now been carried on through all the seasons, and the principal changes taken notice of. Though the advantages resulting from them may yet be but small, a longer series may prove more fruitful. To the writer it appears, that not only a steady course of any kind of weather may produce particular diseases, but likewise very quick transitions from one extreme to another may be equally injurious; with this view he has noted not only the greatest ascent and descent of the quicksilver in his instruments, but likewise the greatest variations that have happened in the space of 24 hours, in any part of the month; and these circumstances he has placed as follows :

## VIEW of the General State of the AIR for 1751.

	Barom.			Thermom.		
	Highest.	Low.	Var.	H.	L.	Var.
April	30.	29.1	3	57	43	4
May	30.4	29.2	3	58	47	5
June	30.3	29.6	5	68	53	5
July	30.1	29.4	6	65	59	3
August	30.3	29.4	3	64	57	3
September	30.3	29.3	6	62	50	6
October	30.4	29.4	3	56	46	5
November	30.5	29.0	4	54	42	8
December	30.4	29.5	3	51	37	6
January	30.4	29.0	2	51	42	4
February	30.2	29.4	3	51	38	5
March	30.6 $\frac{1}{2}$	29.3	4 $\frac{1}{2}$	55	39	6

And it may afford some satisfaction to the reader to observe, that, notwithstanding the daily complaints we hear from those about us, and the repetition of the same complaints that occur in the writings of some foreigners, our climate is more temperate, the extremes of heat and cold more confined, the transitions from one extremity to another more gradual, than could easily have been imagined; and more so, perhaps, than can be equalled in every respect by any country in Europe, of which we have any authentic memorials, as may perhaps on some future occasion be demonstrated.

From the preceding table it will appear, that during the last 12 months the mercury in the barometer never rose higher than 30 inches, 6 $\frac{1}{2}$

tenths; never subsided lower than  $29^{\circ}$ ; consequently, that its motion did not much exceed  $1\frac{1}{2}$  inch in that time, nor more than 6 tenths of an inch in 24 hours.

The thermometer likewise discovers a more equal temperature, with respect to heat and cold, than might have been expected in a country where so many exclamations are daily vented against the inconstancy of the weather, and the irregularity of the seasons: the utmost ascent of the quicksilver was 68 degrees, the lowest descent 37 degrees; so that it only traversed in the several changes from spring to summer, from both to autumn and winter, about 32 degrees, and not more than 8 of these in 24 hours at any one time.

If we, therefore, compare this account with the most accurate we have of the weather in any other country, we shall perhaps find abundant cause to be satisfied with our own, in this, as well as in most other respects.

*Observations on the Weather, &c. in May 1752.*

Barometer.

Highest  $30\frac{3}{10}$ , the 11th. Wind E.

Lowest  $29\frac{4}{10}$ .

Greatest variation in one day  $\frac{3}{10}$ .

Common station 29. 9.

## Thermometer.

Highest 63.

Lowest 49, 30th ult. Wind N.

Greatest variation in one day, from 55 to 61,  
the 13th. Wind N. E.

Common station 55.

The conclusion of the last month was wet, cloudy, cold, with high winds; the beginning of this was more temperate, the weather mostly fair and clear, with showers sometimes intervening, and continued so till towards the end of this month.

The mercury in both instruments has been remarkably steady, the season of the year considered; the sensible changes more moderate than usual; and if the article of small-pox had not swelled the weekly accounts considerably, it would have appeared to have been, as in reality it was, a healthy time, scarce any thing like an epidemical disease occurring in this period.

*Observations on the Weather, &c. in June 1752.*

## Barometer.

Highest  $30 \frac{3}{10}$ . Lowest  $29 \frac{6}{10}$ .Greatest variation in one day  $\frac{4}{10}$ , viz. the 4th.Wind high, S.W. yet it rose from 29.8 to  
30.2.Common station  $29 \frac{2}{10}$ .

Thermometer.



## Thermometer.

Highest 66 deg.      Lowest 59.

Greatest variation in one day 5, the 11th, from  
60 to 65. Wind W. clear and calm.

Common station 61.

The conclusion of the last month was close, sultry, and wet; the fore-part of this was fair, serene, and warm. About the middle, the weather became more variable, and at length set in cloudy, wet, and somewhat cool, and so continues. The wind for the most part was southerly, and sometimes very high, which, together with the moisture of the air, made it cold to the sense, though, by experiment, the heat was equal and moderate.

The small-pox still continues in the neighbourhood of this city, not many escaping who have not had it before. This article, in the weekly bills, hath been very high, but seems now to be upon the decline: the mortality, however, ought not to be estimated by this scale, without taking into consideration the numbers who have it, and escape not only with life, but even favourably; witness the crowds of such whom we daily see in the streets, without any other vestige than the remaining redness of a distinct pock.

There is a circumstance of this disease which I have once seen, and which has fallen under the observation of several gentlemen, eminent in the profession, who related it to me, though I

do not remember to have found it in any writer on the subject. Several children, who had the distemper in a very favourable manner, lost their speech, and became unable to stir or help themselves; and this without being reduced in flesh, or labouring under any discharges that might be supposed to weaken them in any such degree, so that it has much more the appearance of a palsy, than mere imbecillity, and affects the organs of speech as well as other instruments of motion. This disorder has likewise been observed to occur in such cases, chiefly, where the eruption has been attended with convulsions; and I do not remember to have heard of one instance in which this had not been the case.----This affection seems to be more troublesome and alarming to those about the sick, than dangerous; for though it goes off slowly, yet all I have heard of at length have recovered perfectly. A perpetual blister betwixt the shoulders, gentle rhubarb purges, a proper diet, and the air, seemed the most serviceable remedies.

*Observations on the Weather, &c. in July 1752.*

Barometer.

Highest 30. 2, the 18th. Wind S. W. and much rain.

Lowest 29. 5, the 25th. Wind S, fair and clear. Greatest variation in one day 2.

Common station 29. 7.

Thermometer.

## Thermometer.

Highest 70 deg. the 13th. Fair, clear.

Lowest 60, very warm. Wind S.E.

Greatest variation in one day 7 deg. viz. from 63 to 70, the 13th.

Common station 63.

The whole of the preceding month may be said to have been wet, cloudy, and yet inclined to warm. The barometer stood most common at 29.7, or 8, which is what is meant by its common station; it never sunk or rose above two degrees in one day, which shews an equality, hardly to be expected while the wind shifts to every part of the compass, with sudden storms of heavy rain. One phænomenon was remarkable: It rained hard while the quicksilver stood very high; it was fair when at the lowest. This, however, proves no more, than that we are not yet acquainted with all the causes that affect this instrument. The thermometer, except on one particular day, was alike steady; it seldom varied above three degrees in 24 hours, and the quicksilver stood oftener at 62 or 3, than at any other point. The winds blew mostly from the southern or western points, and seldom very fresh.

Few acute diseases, except the small-pox, appeared this month. The article of fevers in the weekly bills was perhaps seldom ever lower. The number of those who died of the first-mentioned disease seems to be lessening; but the ma-

lignity rather seems to increase with the warmth of the weather, some instances having lately occurred of a very malignant confluent sort; considerable numbers however escape: and this year may be marked, in the annals of medicine, as one of the most remarkable constitutions that has happened in our memory, both for the frequency of this distemper, and its mildness; and it may also be taken notice of, that the weather has been at the same time unusually temperate with regard to heat, though in general wet and cloudy.

Children from one to three years old have, I believe, suffered more from this distemper, during this constitution, than those of any other age, at least it has so fallen out under the writer's observation. Several instances he has known, of this age, when the load was not very large, the eruption kindly, the maturation at first very promising; but instead of ripening on the extremities, about the 10th or 11th, they continued crude and watery; the pulse quick, with great heat, delirium, restlessness, and difficulty of breathing; the tongue dry; the belly sometimes loose, with dark foetid stools, at other times disposed to costiveness. In this manner some have continued 17 or 18 days, insensibly wasting both in flesh and strength, in spite of every effort to assist them, and have then expired.

*Observations on the Weather, &c. in August 1752.*

## Barometer.

Highest  $30 \frac{2}{10}$ .      Lowest  $29 \frac{5}{10}$ .Greatest variation in one day  $\frac{2}{10}$ .

Common station about 30.

## Thermometer.

Highest 68 deg. 10th at night. Wind N.

Lowest 60, 16th. High wind at W.

Greatest variation in one day 4 degrees.

Common station 63.

The end of the last month was inclined to be wet, windy, and dark. This began fair, cloudy, and warm: about the middle it became fair, and clear, with some intervening showers, and so continued to the 25th. The wind was variable, seldom continuing more than two days in the same quarter, but kept generally S.W. The quicksilver in the barometer was unusually steady, and often kept high, with the wind at S.E. In the thermometer, except on one or two days, its motion was confined, the season of the year considered, within very narrow limits; the air having seldom been hot, or otherwise than warm, and often moist.

The small-pox, which was slowly decreasing last month, has continued, through the course of this, to grow less frequent, and the bills were less by 40 last week, than at the conclusion of the last month.

Fewer fevers have feldom been known at this feafon; which may be faid in general to be very healthy.---Hypochondriac complaints are frequent; hæmorrhages from various parts, the hemoptoe efpecially are not uncommon; and fuch other complaints as arife from great laxity of the folids, and confequent increafe of vifcidity in the fluids.

*Observations on the Weather, &c. in September*  
1752.

Barometer.

Higheft  $30 \frac{3}{10}$ .      Loweft  $29 \frac{2}{10}$ .

Greateft variation in one day  $\frac{6}{10}$ , viz. the 26th ult. when it rofe from  $29 \frac{2}{10}$  to  $29 \frac{8}{10}$ . High wind at N. W.

Common ftation about  $29 \frac{9}{10}$ .

Thermometer.

Higheft 64 deg. the 19th. Wind South.

Loweft 54, the 27th ult. W. N. W.

Greateft variation in one day 6 deg. the fame day,

Common ftation 60 degrees.

The laft month concluded ftormy, wet, and cold; this began more moderately, though fomewhat windy, dark, and cold: towards the middle the weather became fair, clear, and warm; and, except a few windy days about the 22d, has been moderate, and inclined to fair.

The fmall-pox has almoft totally difappeared  
in

in the city; in the suburbs, and extreme parts of the town, it is much less frequent than it has been; in some of the neighbouring villages it yet subsists, though in none of them, as far as I can learn, with any remarkable frequency.

Many have been seized with pains about the region of the stomach, attended with sickness, vomiting of green porraceous bile, and costiveness. Shiverings, lassitude, and pains in the limbs, often accompanied the first attack; in some, the least attempt to raise the head from the pillow, produced a tendency to vomiting. The heat in most was moderate; the pulse small, and seldom quick. Small doses of the saline mixture, made quite neutral with absorbents, and a few drops of *Tinct. Thebaic.* commonly took off the disposition to vomiting in a short time, and a dose of rhubarb, or hiera picra, then was retained, and gave effectual relief.

Emetics, though of the mildest kind, seemed not to be of the use one might have expected. The pain often seemed to be increased afterwards; the tendency to vomiting became more continual; the lassitude, restlessness, and proneness to vomit, upon motion, more troublesome; and the difficulty of procuring the necessary discharges downwards, increased.

*Observations on the Weather, &c. in October  
1752.*

## Barometer.

Highest  $30\frac{4}{10}\frac{1}{2}$ .                      Lowest  $29\frac{6}{10}$ .Greatest variation in one day  $\frac{2}{10}$ . viz.Common station about  $29\frac{2}{10}$ .

## Thermometer.

Highest 62 deg.                      Lowest 50 degrees.

Greatest variation in one day 6 degrees.

Common station 56 degrees.

During this month, the weather has been less variable, than for the same length of time it has been since the year commenced. Excepting two or three showers, it has been altogether fair, mostly sunshine, and little wind; and though in and about the city there have been very thick fogs, morning and evening, during the two last weeks, now and then continuing all day, yet most commonly they broke away before noon, and left us the clearest sky, for the greatest length of time together, we have had this summer.---The warmth and equal temperature of the air, have been not less remarkable than the dryness; and though the wind has been chiefly N. E. yet the air was neither so cold or piercing, as is commonly felt when it blows from this quarter. Should these remarks afford no other advantage, yet to have it in our power



to compare, and with some degree of exactness, the past seasons with the present, will afford satisfaction; and if the reader looks back to the yearly table (See April 1752, p. 178) he may there at one view see how much the last differed from the present, both in respect to coldness and wet. It may also be proper again to explain what is meant by the words *common station*; which are not intended to signify the mean height betwixt the highest ascent, or lowest descent of the quicksilver, in either instrument, but to denote that it oftener stood about this point, than at any other.

The town in general has been healthy, as from so equal a season might be expected; some inflammatory disorders of the bowels have occurred, but oftener occasioned by errors in diet (especially the eating of vast quantities of walnuts, which are uncommonly plentiful) than by any other cause.

And here it may not be improper to observe, that this nut seems entirely indigestible in the stomach, unless it be first well chewed, and by the teeth ground down as fine as it ought to be to become nutritious. Without this care, it breaks under the teeth into small angular bits, often with sharp edges, capable of hurting very tender bowels; and by this means, and not by any acrid irritating quality they are naturally possessed of, while recent, occasioning pains, sometimes fluxes, or spasmodic constrictions of the guts, and obstinate costiveness.

And it has happened in many such instances, that after the walnuts thus hastily devoured, have laid in the body many days, they have been voided undigested and unaltered, to appearance at least: so that there is great reason to suspect, that as the nuts are swallowed, so they pass the stomach and intestines, no power being therein lodged, capable of reducing them into the form of chyle. It may however so happen that they may become highly injurious, if long retained in the body, not only from their form, as hath been mentioned above, but likewise from a rancid, caustic acrimony, which the oil of this nut seems capable of acquiring, by digestion, as well as most other oils of the like nature and extraction; which from the mildest and least irritating substances become, merely by being exposed to proper degrees of heat, as acrid and as stimulant as most in nature; so that if a spasm is once occasioned in the guts by their figure, and costiveness ensues, they every moment acquire new properties, which render them capable of producing very mischievous consequences. To prevent these, it is therefore best to eat but few at a time, to grind them very well, and then they may be used with as much safety, by most people, as any other kind of fruit.

*Observations on the Weather, &c. in November*  
1752.

Barometer.

Highest  $30 \frac{5}{10} \frac{1}{2}$ .

Lowest  $29 \frac{2}{10}$ . viz. 9th ult. High wind S. S. W.

Greatest variation in one day  $\frac{6}{10}$ , viz. 22d, from  
30.2 to 29.6; thick fog, and wind from  
N. W. to S. S. W.

Common station about  $30 \frac{2}{10} \frac{1}{2}$ .

Thermometer.

Highest 57 deg.      Lowest 46 degrees.

Greatest variation in one day 6 degrees.

Common station 52 degrees.

In this month the weather has been more variable than in some of the preceding; in the first part, the air was mostly fair, clear, and frosty; with thick fogs morning and nights in the city. Towards the middle of the month, it became more dark and cloudy, with high winds at S. S. W. and a few showers; concluding moist and foggy.

The mercury in the barometer often stood at an uncommon height, even with the winds at S. S. W. when it generally subsides very low. In the thermometer it was more variable, though not more so than is usual at this season.

So that upon the whole the weather may be said to have been as temperate in this, the time  
of

of the year considered, as many of the preceding months.

The measles have made their appearance in some parts of the town, but are not hitherto accompanied with any uncommon or very dangerous symptom. The small-pox have not ceased, nor the hooping-cough altogether, yet these are less frequent than they have been.

Rheumatisms, and an insidious kind of rheumatic fever, have appeared this month more frequently than in the preceding. This fever is at first perceived by slight shiverings, acute pains in the limbs, shifting with great quickness from part to part: the heat not immoderate; the pulse, for many days, not much quicker than in time of health; the belly rather costive; and the urine uncommonly thick and clay-coloured. After several treacherous remissions, the head is at length attacked, a delirium, watchfulness, or *coma vigil*, and spasms of every part succeed, which end unhappily.---Whatever evacuations seem necessary, must be directed early; whatever weakens, must in the progress of the disease be avoided; and stimulants applied with moderation. Sometimes *apthæ*, of a benign aspect, happily terminate the disease. If a dark-coloured *ichor* discolours the lips or tongue, the event is too often fatal.

Observations on the Weather, &c. in January 1753.

Barometer.

Highest  $30 \frac{4}{10}$ .

Lowest 29, the 10th inst. with rainy tempestuous weather, wind W. S. W.

Greatest variation in one day  $\frac{6}{10}$ .

Common station  $30 \frac{1}{10}$ .

Thermometer.

Highest 49 degrees.

Lowest 38 deg. 24th, hard frost. Wind N.

Common station 43 degrees.

Greatest variation in one day 5 degrees.

Thermometer in the open air, in London.

Highest 43.

Lowest 32.

Greatest variation between any two mornings, 7 degrees.

The weather in this month, though sometimes variable, has been mostly inclined to cold, fair, and frosty, and in the city, a few days excepted, very dark. The wind was often northerly, and when from the S. and S. W. points, generally blustering, with cold rain or sleet.

The variations were not however so sudden, or sensible, as to affect the general health in a very eminent degree; except in chronic disorders of the breast, as asthmas, peripneumonies, and *defluxions*, which were very frequent about

the beginning of the month, and were fatal to many.

Some slow continual fevers have likewise appeared, and terminated variously, some with benign *apthæ*, which appeared critical, or else with miliary eruptions, not in the neck and breast only, but over the whole body.

This kind of fever seldom admits of any evacuation, after the disease is once confirmed, except by blisters, and moderate sweats: and these, if profuse, are mostly prejudicial, and the former almost always so, when applied very early, as is too much the general practice of those, who, by a pernicious custom, are commonly the first consulted; and who seldom fail to advise bleeding and blistering almost in the same breath, and such medicines, as they suppose will promote the most plentiful sweats: so that in two or three days, it often happens that the sick have undergone every species of pharmaceutical direction, and are then surrendered, unnecessarily enfeebled, into the hands of the physician; who can only lament the loss of those forces, which he sees himself deprived of, to combat the disease; and submit to a tedious attendance, and a doubtful prognostic, than which scarce any thing is so disagreeable to the rational and humane practitioner.

*Observations on the Weather, &c. in February*  
1753.

Barometer.

Highest  $30 \frac{4}{16}$ .      Lowest  $29 \frac{1}{16}$ .

Greatest variation in one day  $\frac{4}{16}$ .

Common station  $29 \frac{8}{16}$ .

Thermometer within doors.

Highest 52 degrees.

Lowest 38 deg. 11th, hard frost. Wind N. E.

Thick fog.

Common station 45 degrees.

Greatest variation in one day 5 degrees.

Thermometer without doors, at 8 in the morning.

Highest 51.      Lowest 29, the 11th ult.

Greatest variation in one day 10 deg. viz. the  
13th, from 35 to 45.

Common station 43.

The last month concluded frosty, dark, and very cold; this began with frost, sleet, or snow: towards the middle, the weather became wet and more temperate, and so continued, with some short intervals of fair and clear weather, to the end of this account. The winds were variable, and sometimes blustering, from the S. S. W.; as they were cold, with dark fogs, from the N. and N. E.

The fevers mentioned in the last month occurred often in this, and proved fatal to several.

Rheumatifms were also common, and especially among children from 4 to 8 or 10 years old: these young subjects generally were seized with a pain about the neck, back of the head, or the shoulders; from hence it often shifted to the hands and feet, and knees, and plainly discovered its nature by the swellings it produced: the fever attending it had regular exacerbations in the evening, followed by moderate sweats and freedom from pain in the morning; which interval continued with a calm quiet pulse till 4 or 5 in the afternoon, when the symptoms again appeared. In some young subjects, where evacuations were used too freely, either by bleeding or purging, the disorder proved suddenly and unexpectedly fatal; the pains of the head became violent, either a convulsion, or hemiplegia, or both, succeeded, and death soon followed. A decoction of the bark, with rhubarb sufficient to keep the belly open, given in small doses, and often, especially in the intervals, commonly removed the disorder in a few days with great certainty; whilst bleeding, purging, and diaphoretics, often rendered the distemper tedious, and sometimes, as is observed above, fatal.---Some ancient people died suddenly, soon after the weather, from very cold and dry, became wet and temperate; and some instances occurred at this time, as they have done heretofore in the like cases, that have repeatedly induced me to reflect on the promiscuous use of bleeding in these sudden emergencies, with some anxiety. For  
it



it seems very probable, that the cases of persons in years, who are seized with apoplexies, sudden faintings, or other symptoms of speedy dissolution, in which bleeding can be of any use, are very few. And

That cases of this nature, in which bleeding is certainly pernicious, and deprives the unhappy person of any chance for a recovery, are very numerous.

It would carry me beyond the limits I have any right to ask for, and into a series of reflections not suited to every reader's taste, to endeavour to fix the proper indications for bleeding: but what is above suggested will, I hope, induce every practitioner to think twice, before he orders this operation to be performed; because in many cases, if the patient should survive it, either a universal palsy succeeds, and the patient dies in a short time; or he is seized with a partial one, which perhaps attends him to his grave. Common usage precipitates too many into this practice; and of the few who think at all, it is not every one who has resolution enough not to be influenced by so current an opinion.

*Observations on the Weather, &c. in March 1753.*

Barometer.

Highest  $30 \frac{5}{16}$ .      Lowest  $29 \frac{6}{16}$ .

Greatest variation in one day  $\frac{4}{16}$ .

Common station 30.

Thermometer within doors.

Highest 54 deg.      Lowest 43 deg.

Common station 48 degrees.

Greatest variation in one day 6 degrees.

Thermometer without doors.

Highest 55 deg.      Lowest 32 deg.

Greatest variation in one day 8 degrees, *viz.* the 14th, from 42 to 50. Wind S. W.

Common station 40.

The mercury in the barometer, during this inconstant month, has ranged within narrower bounds than usual, and its transitions have been more confined. In the thermometer, the variations have not been very remarkable. The former part of this month, as well as the conclusion of the last, the weather was mostly fair, clear, and cold, the wind generally at E. or N. E.; towards the middle it shifted to the S. W. blowing fresh with gentle showers and temperate warmth, and so continued to the end of the month.

Disorders of the breast were frequent; several young sanguine persons, especially, had spittings of blood, without much pain in the breast, or difficulty of breathing: moderate evacuations, by bleeding and purging, with small doses of nitre and the mildest balsamics, soon relieved them. About the middle of the month divers complained of unusual head-achs, attended with feverish symptoms, which were often very alarming at the first attack, but soon subsided. They complained first of pain or stiffness in the neck, with

with darting pains about the temples, and so acute as oftentimes to raise the pulse and heat considerably. The external parts of the head grew sore; and to such a degree as it was painful to rest it on the pillow. Now and then the pains remitted an hour or two, and again returned with their former violence; but the whole abated in three or four days, and gradually wore off, leaving, however, a sort of uneasiness about the head, which the patients commonly compared to a cap of lead, or some heavy substance inclosing it. Moderate bleeding or cupping, blisters, nitre joined with volatiles in small doses, and given often, were ordered to several under these complaints, with advantage.

Palsies also were not uncommon, and afforded some fresh instances of the disadvantages of indiscriminate bleeding. The writer of these remarks is no enemy to this operation in general; but in diseases, where every means that the physician employs are such as invigorate, to begin the cure by deducting from that force which we want to increase, certainly requires some consideration.---There may be cases, it is allowed, where bleeding in palsies may be of use; but that it is generally so, is denied; and cool, unprejudiced observation will, I doubt not, lead to the same opinion. And it is of the more consequence to deliberate maturely on this operation in the case before us, in as much as the remedy in question is not of the unimportant kind: if it is not proper, it is very improper, and costs the

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patient

patient much time to recover it, and the physician not a little uneasiness, to see his utmost efforts avail much less, than where bleeding has been omitted.

*Observations on the Weather, &c. in April 1753.*

Barometer.

Highest  $30\frac{2}{10}$ .                      Lowest  $29\frac{2}{10}$ .

Greatest variation in one day  $\frac{4}{10}$ .

Common station  $29\frac{7}{10}$ .

Thermometer within doors.

Highest 59 deg.                      Lowest 41 deg.

Common station 52 degrees.

Greatest variation in one day 6 degrees.

Thermometer without doors.

Highest 60 deg.                      Lowest 39 deg.

Common station 45.

Greatest variation in one day 10 degrees.

The weather, at the end of the last month, and the beginning of this, was generally fair, clear, and temperate, though with intervening showers sometimes accompanied with hail. Towards the middle it became more disposed to be wet, dark, and cold, but grew uncommonly warm, serene, and pleasant, for a few days, about the 20th; after which it again became cool, with showers almost daily. The wind has generally been S. S. W. or west; a few days it stood N. E. and sometimes N. W. Upon the whole, the  
weather

weather has been feasonable; the advances to warmth very flow and uniform: and, in this place, few remember to have observed a fpring, wherein the progreff from cold to warm, or rather temperate, which it has never yet exceeded long together, hath been more natural.

As the weather has been thus uncommonly feasonable, the difeafes have been few, and the acute ones lefs violent.---Coughs with a remarkable hoarfenefs, fome ftraitnefs of the breath, and, in fome, attended with a copious expe&tion, have been frequent during this month; likewise the fore-throat, attended with ulcers, but generally mild, unlefs where copious bleeding, purgatives, and nitre, had made it otherwife. Fewer fpring-fevers have occurred than I have ever known; and thefe, commonly, by moderate evacuations, foon became regular intermittents, and early gave way to the bark.

*Obfervations on the Weather, &c. in May 1753.*

Barometer.

Higheft  $30\frac{5}{16}$ .                      Loweft  $29\frac{4}{16}$ .

Greateft variation in one day  $\frac{2}{16}$ .

Common ftation  $30\frac{1}{16}$ .

Thermometer within doors.

Higheft 61 deg.                      Loweft 50 deg.

Greateft variation in one day 3 degrees.

Common ftation 44 degrees.

The weather in this month has been less variable than is usual at this season: the mercury in the barometer kept very high for the most part, even with the wind at S. W. In the thermometer, its motions have been confined to narrow limits, the time of year considered. During the whole spring, the progress from cold to temperate and warm, hath been the most gradual and regular that most people remember; and the transitions from one extreme to the other very inconsiderable. For which reasons the year has been thus far healthy, the produce of the earth abundant, and the prospect of still greater abundance very promising.

Nothing like an epidemic has appeared; and consumptions, the common spring disease, have not been so numerous as in some preceding years. Palsies and apoplexies were frequent about the beginning and middle of the month, and some hæmorrhages towards the conclusion.

A root, of which the Chinese have long been extravagantly fond, has of late, I find, been recommended in this place; and merits the greater consideration, as it is one of the products of our own colonies in North America. The name of this drug is *Ginseng*; the manner of its discovery, and other circumstances of its natural history, would take up too much room: but give me leave to say, that some considerable parcels of the root have been sent to China, and disposed of to great advantage; that this advantage would still have been greater, had those who gather the

root, collected it at a proper season, and cured it in the Chinese manner; and that it has been tried in many cases here, yet not so fully as to establish its character in any particular disease. In tedious chronic coughs incident to people in years, a decoction of it has been of service; and in such disorders as attend advancing years, where the solids are too inactive, the fluids viscid and acrimonious, it seems to promise considerable benefit, if used in moderate doses, and long continued. Time will, perhaps, discover its proper effects; and, as it consists of a mild, lubricating mucilage, joined with some degree of aromatic warmth, it may be tried in such disorders with great safety. One drachm and a half, boiled in four ounces of water, in a close vessel, and slow heat, about half an hour, will be a proper mean dose; or it may be given in powder to half a drachm or two scruples. Upon the whole, though it does not seem entitled to even a moderate share of those virtues that are romantically ascribed to it by the Chinese (*a*), yet is it very well worthy the attention of the faculty, and promises fair to be a more useful and efficacious medicine, than many now kept in the shops, as the Sarsa China, and some others; and a medicine too, of which we may always depend on a constant supply from our own plantations.

(*a*) Du Halde's hist. fol. vol. i. 322. li. 217.

*Observations on the Weather, &c. in June 1753.*

Barometer.

Highest  $30\frac{3}{10}$ .                      Lowest  $29\frac{7}{10}$ .

Greatest variation in one day  $\frac{2}{10}$ .

Common station  $30\frac{1}{10}$ .

Thermometer.

Highest 71 deg.                      Lowest 56 deg.

Greatest variation in one day 11 degrees,  
the 9th ult. from 59 to 70.

Common station 66 degrees.

The last month concluded dry, fair, and warm; this began in the same manner, and continued so till about the 20th, the heat daily increasing. About this time the air was cooled by some moderate showers; storms of hail fell in some parts, and in the villages about London, and did considerable damage; very little fell in the city. The wind kept generally N.N.E. or N.W.

The motions of the quicksilver in the barometer, were confined within very narrow limits; in the thermometer, the contrary happened, the transitions in this instrument having been the most sudden and expansive, that have lately been observed. About the beginning of the month several were seized with remittent fevers, which, after moderate bleeding, an emetic, and emptying the first passages, either went off in a few  
days



days, or became intermittent, and soon yielded to the cortex.

Several were likewise seized with a disorder in the bowels in the nature of a nephritic cholic, with bilious vomitings, obstinate costiveness, and pain about the region of the kidneys; and sometimes a dysury, though without any certain indication of gravel, or that the parts were affected any other way than by a spasmodic constriction from consent of parts.

*Observations on the Weather, &c. in July 1753.*

Barometer.

Highest  $30\frac{3}{10}$ .      Lowest  $29\frac{5}{16}$ .

Greatest variation in one day  $\frac{3}{10}$ .

Common station  $29\frac{9}{16}$ .

Thermometer.

Highest 72 deg. viz. the 7th instant; and without doors, in a cool shade, 80.

Lowest 57 deg.

Greatest variation in one day 5 degrees.

Common station 64 degrees.

The last month concluded fair, cloudy, and temperate: this began with some hot days, which, towards the middle, were succeeded by some refreshing showers: after which the weather continued for the most part fair, sometimes cloudy and cool, at others hot and sultry. The 7th was a hotter day than any in the two last years, in this place.

Apoplexies

Apoplexies have been more than commonly frequent and fatal: even persons much below the meridian of life, have been suddenly snatched off by this distemper. Some fevers of the low depressed kind have appeared; many have been seized with inflammations of the bowels; and, in some of the neighbouring villages, the sore-throat, attended with ulcers, has appeared in divers families.

The frequency of apoplexies has furnished some fresh opportunities of observing the effects of bleeding in this disease, and strengthened the writer's opinion, that this evacuation is far from being always advantageous in this distemper: on the contrary, he has seen instances wherein he thinks it has been attended with the worst consequences.

*Observations on the Weather, &c. in August 1753.*

Barometer.

Highest  $30 \frac{3}{16}$ .                      Lowest  $29 \frac{3}{16}$ .

Greatest variation in one day  $\frac{3}{16}$ .

Common station  $29 \frac{5}{16}$ .

Thermometer.

Highest 66 deg.                      Lowest 60 deg.

Greatest variation in one day 5 degrees.

Common station 63 degrees.

The conclusion of the last month, and beginning of the present, were fair and temperate; towards the middle, the weather became wet, cloudy,

cloudy, and cool, with high winds at S.W.; about the 20th it became fair, clear, and warm, and continued so. The wind was variable, often shifting to opposite points the same day: it kept northerly for several days, but for the most part S.W. or S.E. The quicksilver in neither of the instruments, had any remarkable motion; whether it rose or fell, it was slowly, nor were the transitions from heat to cold, or the contrary, sudden or very considerable.

Many, during this month, have complained of disorders in the head, before the rains, about the middle of the month especially. Some had a dizziness to such a degree as to render it almost dangerous to walk abroad; others had acute pains affecting one part of the head only, as the forehead, or down one side, with great languors, sickness, and a quick small pulse: in several of these, after a few days, the disorder became intermittent, and was easily removed by the bark. And most of the acute diseases that have occurred in this period, have discovered a tendency this way; the head being very much afflicted during the paroxysm, not so much with violent pain, as with great confusion and dizziness, so far as to be unable to raise it from the pillow without suffering greatly. Bleeding moderately at first, with an emetic as soon as convenient, the saline draughts during the paroxysm, and the bark in substance given plentifully in the intervals, soon removed the complaints in many instances. Blisters gave no relief, but most commonly

monly brought on very violent stranguries, which seems to be their usual effect in summer and in autumnal diseases, more than in those of the spring.

*Observations on the Weather, &c. in September*  
1753.

Barometer.

Highest  $30\frac{3}{10}$ .      Lowest  $29\frac{2}{10}$ .

Greatest variation in one day  $\frac{3}{10}$ .

Common station  $30\frac{1}{10}$ .

Thermometer.

Highest 66 deg.      Lowest 56 deg.

Greatest variation in one day 7 degrees, *viz.* the 25th, when it sunk from 63 to 56, the only day in the whole month in which it either sunk so low, or varied above half so much.

Common station 63 degrees.

From the 26th of the last month, to the 25th of this inclusive, there have been but five or six days on which any rain has fallen, and on most of them very inconsiderable quantities; the heat has, at the same time, been unusual in this climate, with the most settled drought that has of late years been observed. For though the wind has blown, in this period, almost from every point of the compass, yet the barometer has stood motionless at 30 inches, with the wind at S.E. for days together; a phenomenon very rarely

rarely observed, and an indication of the most uncommon propensity to dryness:

From this state of the weather, fruits of every kind this country affords, have been ripened to the greatest perfection; and, if the wines of our own vineyards are at any time to be drank without prejudice, for this seems to be the most we can expect in this country, the wines of this year's growth stand the fairest chance for it. But, at the same time that the dry hot weather has had this effect with regard to fruits, it has burnt up the herbage in the neighbourhood of London altogether, except in the marshes, and very low meadows; on the higher grounds scarce the least appearance of verdure remains; so that with the withered sun-burnt aspect of the country about us, and the clouds of dust that are raised by the carriages, &c. in every avenue to this metropolis, we resemble the scorched Campagna, rather than the verdant environs of London.

Bilious cholics, inflammations of the bowels, remittent fevers, with violent head-achs, vomitings, restlessness, faintings, high-coloured urine, and bilious stools, become more frequent, but not very fatal; the patients bear moderate bleeding well, gentle purgatives of the saline kind, and plentiful diluents: blisters are seldom indicated; when applied, they are often injurious, and often bring on unconquerable stranguries, to which the sick are many of them prone, this present season, where no blisters have been applied.

---And the writer thinks he has oftener than in one season found, that blisters, after hot dry summers, are injurious in common, and perhaps for the very reasons that render them beneficial, nay absolutely necessary, in most kinds of vernal fevers.

In the present remittent fevers, the sick are disposed to copious sweats, which weaken but afford no relief. Every plentiful evacuation sinks them considerably, and especially if the disease is advanced a few days; which is mentioned to guard against the imprudent, indiscriminate use of a celebrated powder, long since discarded from rational practice, on account of its danger and uncertainty, and of the pernicious effects whereof the writer has lately been a witness, though administered in a much smaller dose than is commonly given, and under circumstances the most encouraging to hope for advantage from it.

*Observations on the Weather, &c. in October*  
1753.

Barometer.

Highest  $30\frac{3}{16}$ .      Lowest  $29\frac{5}{16}$ .

Greatest variation in one day  $\frac{5}{16}$ .

Common station 29.

Thermometer.

Highest 64 deg.      Lowest 52 deg.

Greatest variation in one day 5 degrees.

Common station 59 degrees.

The weather in this month; though more variable than in the preceding, has for the most part been mild and temperate, even with the wind at N.E. about which point and the N. it has kept for some time. There have been a few showery days, but in general the weather has been fair and cloudy, with some heavy mists.

About the beginning of the month several were attacked with slow remitting and dangerous fevers; which still continue to affect divers. The manner of the attack was various: some were attended with a thrilling coldness; with very little heat intervening, either night or day, during three or four days; and even, after they were confined to their beds, a slight, though almost constant rigor attended them most part of the day, till at length an uneasy heat took its place, and continued without intermission many days. But this was not the case in all: the beginning was more sensibly felt by several; the rigor more violent and of shorter continuance; the succeeding heat, though more intense, of a shorter duration; and the concomitant symptoms the more natural. Persons of a fresh florid habit were generally seized in this manner, and mostly recovered; the disease either speedily terminating in an intermittent, or decreasing about the 14th with a thick lateritious sediment: but such as were of a squallid, or pale swarthy complexion, and were seized with this fever, were attacked in the manner first described: the beginning was obscure, the patient often went abroad, with chil-

ling rigors, many days, and applied for help when the disease was advanced to such a period, as to admit of very little either from art or nature. The fresh and sanguine bore bleeding repeatedly, to advantage; the head-ach, restlessness, and heat, often abating after it. But the others did not receive the like benefit: a moderately warm and cardiac regimen; keeping the sick from profuse sweats, or any weakening evacuation; supplying thin diluting liquors often, and in small quantities, seemed to afford the greatest relief.---Rheumatisms have been frequent in this month, as is common at this season, and probably as much owing to a want of accommodating the cloathing to it, as to the variability of the weather.

*Observations on the Weather, &c. in November*  
1753.

Barometer.

Highest  $30\frac{3}{16}$ .      Lowest  $29\frac{4}{16}$ .

Greatest variation in one day  $\frac{5}{16}$ .

Common station  $29\frac{8}{16}$ .

Thermometer.

Highest 58 deg.      Lowest 45 deg.

Common station 49 degrees.

Greatest variation in one day 7 degrees.

The weather in this month for the most part has been cloudy, cold, and fair, with sharp frosts,  
but



but of no long continuance, and interrupted with cold rain; the wind frequently at N. W.

The same kind of fever as mentioned in my former, has continued to shew itself during this month, and has terminated fatally in many instances, and chiefly, perhaps, from slower and imperceptible approaches. Often has it affected the sick great part of a week before they have been induced to seek any relief, when the moments of affording it effectually were passed. Copious evacuations of any kind were observed to be injurious; the sick were not often disposed to any, except profuse sweats, which were never found, that I know of, relieving.

Disorders of the bowels were frequent, in some with obstinate costiveness, with a diarrhoea in others, and generally yielded to the known methods.

*Observations on the Weather, &c. in December*  
1753.

Barometer.

Highest 30 inch. 4 deg.

Lowest 29 inch. 22 deg.

Greatest variation in one day 7 deg.

Common station 29 inch. 8 deg.

Thermometer within doors.

Highest 58 deg.                      Lowest 40 deg.

Greatest variation in one day 7 deg.

Common station 47 deg.

Thermometer without doors.

Highest 55 deg. the 22d inst.

Lowest 29 deg. the 8th.

Greatest variation in one day 10 deg. *viz.* the 12th, from 40 to 50.

The last month concluded with hard frost, the weather very cold, the wind N. or N. W. The beginning of this month likewise was cold and frosty, but often dark, thick, hazy weather. About the 10th we had some snow, but this was soon carried off by warm rain, the wind shifting suddenly from N. E. to S. E. and S. W. where it continued to the 25th, the weather being uncommonly warm, though dark and showery. Upon the whole, we have had greater vicissitudes, and more sudden transitions from cold and dry to warm and moist, in this month, than has happened in any one for a considerable time past.

About the beginning of the month, during the sharp frost, several were seized with the small-pox, of a dangerous kind. The pustules appeared in several on the second day, and without much previous indisposition. The fever of eruption was far from being violent, and the pulse often continued as slow as in perfect health, and much smaller till the 4th or 5th day from the eruption, the sick in the main delirious in the night, and no way abating as the ptyalism, which was in many cases profuse, and boded danger, came on. About the 7th the pulse became more quick,

quick, but not more strong; heat, restlessness, and delirium increased, and if the patient survived the 11th, it was often with great difficulty, and generally to undergo fresh dangers from the secondary fever; but a peripneumony proved fatal to several about the eleventh.

The pustules, instead of filling with a kindly yellowish matter, or appearing of this colour externally, were, in all that I saw, of a pale cream-coloured aspect, running into one another on the face, with here and there, both on the face and limbs, small mortified crusts, and the whole aspect as if covered with a wetted parchment.

The causes that produced the slow, treacherous, remittent fever, mentioned in a preceding account, seem to have produced the like unfavourable disposition of the habit in this. The attack in both was not alarming; the progress slow and fallacious; the approach of the crisis terrible, and too often fatal.---However, the disease is by no means general; many of those who have it, 'tis true, have it in a pretty severe manner, yet many escape. A decoction of the Cortex, with small doses of Conf. Damocrat. *viz.* 10, 15, to 20 gr. given in the languid state, has been of service in some cases; exchanging this regimen for a mild, demulcent, yet moderately cordial regimen, as the disease advanced,

A case of an unusual nature, the subject considered, has probably occurred to many practitioners within this month or six weeks. It appears at least unusual to the writer, and he there-

fore mentions it. He has been called to several children, and to none much above seven years of age, and girls chiefly, who have had the jaundice. He has heard from others, that the like cases had occurred to them. The writer found that a grain, or gr.  $\frac{1}{5}$  of Calomel, in a pill, with Tereb.  $q. f.$  every night, and a few spoonfuls of the saline mixture two or three times a day, soon took off the yellowness, costiveness, and high-coloured urine; and a tea-spoonful of the Vin. Chalybeat. in chamomile-tea, restored their appetite and vivacity, which were always greatly affected, and seemingly more than even in adults.

*Observations on the Weather, &c. in January*  
1754.

Barometer.

Highest  $30\frac{5}{16}$ .      Lowest 29.  
Greatest variation in one day  $\frac{5}{16}$ .  
Common station  $29\frac{8}{16}$ .

Thermometer within doors.

Highest 55 deg.      Lowest 40 deg.  
Greatest variation in one day 5 deg.  
Common station 45 deg.

Thermometer without doors.

Highest 48.      Lowest 25.  
Greatest variation in 24 hours 12 deg.  
Common station 40 deg.

The last month ended fair, frosty, cloudy, and very cold; wind N.E. This began in the same manner,

manner; but the wind suddenly shifting to the S. W. the weather became less cold, but still inclined to frosty. About the middle we had some heavy rains, the cold moderate, and the weather continued variable till towards the end, without any remarkable excess in any respect.

Two singular phænomena appeared in the barometer in the course of this month, *viz.* about the 8th the quicksilver stood at 29.2, the wind northerly and fair. In common, when it stands so low we seldom fail of heavy rains, high winds, or snow; but none of these happened in the neighbourhood of this place; nor had we any accounts of deep snows or much rain in the north about this time; though I have never known the like circumstance happen without one or other of them falling plentifully to the northward.--- The other phænomenon was the reverse to this. While the quicksilver stood several days together at 30.5, we had southerly winds, with rain, and the weather temperate. It is difficult to account for this, unless we suppose a current of wind from the N. or N. E. to have passed above the southern stream, and in a greater quantity.

The sudden transitions in the former month, and the variable temperature of the present, seemed to render acute diseases, for a time, more frequent and fatal. Fevers of the kind before mentioned continued; plentiful bleeding almost always brought on very alarming symptoms. It seemed, however, necessary to bleed moderately once, and sometimes, by cupping, to mitigate the head-ach,

head-ach, of which all the patients complained, some more some less. Blisters applied early increased the heat; and, if a sweating regimen was pursued, about the seventh or eighth day small red irregular *stigmata*, not round, as regular *petechiæ*, shewed themselves about the neck, breast, and arms, in great numbers, appearing just as if an eruption was about to follow; but they never rose above the surface of the skin.---Avoiding all immoderate evacuations; keeping the patient moderately covered; supporting his strength with proper liquids, without loading him with too much of them; promoting the circulation gently with the milder diaphoretics; and applying blisters, successively, as the falling pulse seemed to indicate their necessity, were the means of conducting some, who had this species of fever, through very imminent dangers: under which circumstances the discharges from the blisters seemed to be of singular advantage; for it happened, in divers instances, that with the common dressings only, blisters on the arms, where they are rather more readily disposed to heal in common than in some parts of the body, have kept open a week or ten days, nay, in one case, a fortnight, the matter being often at first thin and sanious, but becoming gradually laudable and plentiful.

Rheumatisms were also frequent about the breaking up of the frost, and the muscles of the thorax being in some cases affected, made it difficult to distinguish in what degree the internal  
 parts

parts likewise suffered; which nevertheless is a circumstance of great moment, as the method which would be the most likely to remove a genuine inflammation of the lungs or pleura, would often increase a rheumatic affection of the muscles concerned in respiration, and bring on that very disease which it was intended to remove, *viz.* an inflammation of the lungs, for want of a just dilatation of the thorax. This, however, is not designed to prevent bleeding in the above-mentioned cases, but as a caution to some, who may have been taught to think, that copious bleeding is indicated, whenever a patient complains of pain in any part of the region of the thorax.

*Observations on the Weather, &c., in February*  
1754.

Barometer.

Highest  $30 \frac{6}{10}$ .      Lowest  $29 \frac{5}{10}$ .

Greatest variation in one day  $\frac{5}{10}$ .

Common station  $30 \frac{2}{10}$ .

Thermometer without doors.

Highest 48, the 13th instant.

Lowest 25, the 6th and 7th. Severe frost.

Greatest variation in one day 17 deg. between the 1st and 2d inst. when the quicksilver rose from 27 to 40 deg.

The

The frost, which began about the 26th of the preceding month, became intense in a few days, and continued till the 9th, when it broke up with a sudden, but a very cold thaw, with fleet and heavy cold rains. After this the weather became more temperate, the mornings frosty and sharp, but the air in the day commonly serene, seasonable, and fair, and so continued to the 26th.

The quicksilver in the barometer has kept, during this changeable weather, within very confined limits, the season considered. In the thermometer it has seldom varied more; nor could it be expected to happen otherwise. For the satisfaction of those gentlemen who employ themselves in the like observations, it is thought proper to acquaint them,

That the instrument by which these are made, is graduated according to Fahrenheit's scale, and was made by a workman of reputation.

That it is placed without doors, in a court, one story from the ground, in a situation sheltered from any current of wind, as well as secured, by the height and situation of the neighbouring houses, from the direct or reflected influence of the sun.

That the usual hour of observation is about eight in the morning, in winter, seven in summer; and that the place is near the center, and one of the most populous parts of the city.

It may be likewise observed, that the instrument



ment is distant about two inches from the wall, and has as little connection as possible, to be secure, with any solid body. The scale is wood, and touches the tube in very few points.--- Though the writer imagined he had chosen a very proper place within doors, to discover the general temper of the air, yet, from a strict attention, he finds that many causes concur to render this instrument uncertain within doors, in any situation, and he doubts it is still liable to many exceptions without.

Thus far no diseases have appeared in the city or suburbs, so far as the author knows, that have any thing peculiar to merit a farther description at present.

*Observations on the Weather, &c. in March 1754.*

Barometer.

Highest  $30 \frac{6}{10}$ .                      Lowest  $29 \frac{2}{10}$ .

Greatest variation in one day  $\frac{5}{10}$ .

Common station  $30 \frac{2}{10}$ .

Thermometer within doors.

Highest 51.

Lowest 38 deg. the 13th and 18th. Hard frost and much snow.

Greatest variation 6.

Common station 44.

Thermometer

Thermometer without doors.

Highest 46. Lowest 29, the 12th. Frost.  
Greatest variation 6.

Common station 37.

The unusual severity of the weather in this last month claims a particular notice, as the like, perhaps, hath not been observed in this country for many years. The last month ended rather temperate and fair, the barometer without doors keeping always above 40, and within doors commonly near 50. About the 5th ult. the wind shifted from S. W. to N. E. and the weather from temperate and clear became gradually more cold and cloudy. On the 9th it began to snow, freezing hard at the same time, and continued snowing, more or less, almost every day to the 25th, the time when this monthly account concludes. During this time the weather was for the most part unusually dark and cloudy, the wind often high, and from the N. W. N. or N. E. points.

Disorders of the breast were, during this time, both frequent and fatal. Lax corpulent habits, subject to coughs and asthmatic complaints, suffered extremely. A thin irritating defluxion, with little appearance of a fever, began, and produced violent and incessant coughing. Bleeding afforded some temporary relief; but, if copious, weakened. Discharges by stool, either spontaneous or artificial, gave little relief. Plentiful expectoration was the most beneficial; but the quantity to be discharged too often exceeded the force

force of nature; and, notwithstanding the application of blisters, the use of mild balsamics mixed with volatiles and the more stimulating expectorants, (as the case seemed to require all) too often proved unsuccessful. Palsies were likewise not uncommon; and the writer thinks he has met with fresh cause to suspect, that the too free and frequent use of the lancet, in such complaints, sometimes subjects both the patient and physician to insuperable difficulties.

*Observations on the Weather, &c. in April 1754.*

Barometer.

Highest  $30\frac{3}{10}$ .      Lowest  $29\frac{3}{10}$ .

Greatest variation in one day  $\frac{4}{10}$ .

Common station 30.

Thermometer within doors.

Highest 56.      Lowest 41 deg. the 25th.

Greatest variation in one day 9, the 18th, from 50 at night to 41 in the morning. Hard frost and snow.

Common station 50.

Thermometer without doors.

Highest 54.      Lowest 32.

Greatest variation 7, the 6th, from 47 to 54.

Common station 41.

Greatest variation between morning and noon 10.

The unusual severity of the weather, both in this and other parts of Britain, during this month, will probably be long remembered. A few days before

before this account concludes, the cold indeed began to relax, and there was now and then a day, towards noon, when the air was temperate; but in general it has been cold and dry to an extreme degree; the frosts sharp, and accompanied with snow and hail. From this state of the weather, every appearance of spring has been excessively retarded, and the powers of vegetation in a manner locked up. Scarce an alder-leaf fully expanded, and the lilies but half opened; from these it will be easy to judge of the rest.

Thus far, however, the general health has not suffered by it, nothing like an epidemic having shewn itself in the city, nor the sporadics numerous. Spasmodic or rheumatic pains of the breast have affected some, but have been soon removed by moderate bleeding, small doses of camphire and nitre mixed, with laxative only and volatile medicines, as occasion required.

*Observations on the Weather, &c. in May 1754.*

Barometer.

Highest  $30\frac{1}{16}$ .                      Lowest  $29\frac{6}{16}$ .

Greatest variation in one day  $\frac{3}{16}$ .

Common station  $29\frac{9}{16}$ .

Thermometer within doors.

Highest 61 deg.                      Lowest 53.

Greatest variation in one day 6 degrees.

Common station 57 degrees.

The thermometer without doors has not been so carefully observed this month, as to furnish a regular account of it.

The weather about the end of the last month was temperate and fair, the wind S. W. it veered soon to the N. E. and the air grew cool and cloudy, though dry. Towards the middle of this month it became more temperate, the wind southerly, and at length succeeded some plentiful warm rains about the 22d, which continued with some interruptions a few days, when the weather again became cool and fair.

Perhaps there are but few who can remember so sudden an alteration in the face of vegetative nature, as hath happened in this month: spring, instead of her usual progress, which in this country has been interrupted and slow, came upon us at once, and the scene which had been so long dreary and desolate, was suddenly covered with verdure; the trees blossomed into fragrance and beauty, and the pledges of plenty were every where scattered with the utmost profusion. Those who repined at the delay, and were ready to wish the power of rain and sunshine in their own hands, are once more detected in the folly of discontent, and it is to be hoped they will at last learn to acquiesce, not only with cheerfulness, but gratitude, in the dispensations of that unerring goodness which presides over universal nature, and has so long blessed this country with *health and fruitful seasons.*

In respect to diseases, none have appeared that

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deserve

deserve the name of epidemic. Rheumatifms, vernal intermittents, and consumptive complaints, have been the most frequent, but not more so than in other springs.

The small-pox, which was beginning to spread in some parts of the town, seems to be upon the decline ; except by inoculation ; for this practice daily gains ground, notwithstanding some instances now and then occur, that are not attended with the happy success one could wish for. In general, however, both the favourableness of the disease itself, and the absence of various ill consequences attending it in the natural way, are so much in favour of inoculation, that in time it seems likely to become the general practice, and may thereby secure to the state a multitude of useful lives, to the parties themselves tranquillity of mind, and to many of them agreeableness of person.

It may again be proper to remind those who are engaged in this practice, that the slightest scratch with the point of a needle, or any other instrument that will just make the blood start through the scarf skin, will be sufficient; and that much less than the tenth part of an inch of fine thread, that has been drawn through a ripe pustule, will be enough to produce the disease. And also, that the matter should not be applied, by the person who has taken it from the variculous patient, soon after he has procured it, for the reasons alledged in a former *Magazine*, (vol. xxiii. p. 218.)

*Observations on the Weather, &c. in June 1754.*

## Barometer.

Highest  $30\frac{1}{10}$ .      Lowest  $29\frac{7}{10}$ .Greatest variation in one day  $\frac{3}{10}$ .Common station  $29\frac{8}{10}$ .

## Thermometer within doors.

Highest 65 deg.      Lowest 57.

Common station 61 degrees.

Greatest variation in one day 4 degrees.

The weather at the end of the last month was cool, cloudy, and dry; at the beginning of this it became more warm and clear; a few days about the middle were still warmer; but as the month advanced, the weather grew more cloudy and cool, except some sudden gleams of heat from a few hours of a clear mid-day sun now and then, which raised the thermometer without doors considerably, while within doors it remained unaltered, varying not more than about four degrees in any one day or night, as far as occurred to the observer, in all this period.

The wind has been chiefly S.W. or W. and mostly pretty high, which both covered the sky with clouds, and kept off the rains from these parts, except now and then some acceptable showers, and a wet day or two near the end of the month.

The same kind of remittent fevers, mentioned in a preceding month, have appeared, though not in great numbers; irregular intermittents have likewise been frequent, especially periodical hemicranias, which soon gave way to the Bark, with so much Rhubarb, or Tinct. Guaiac. Volat. added, as kept the belly rather lax than costive. Coughs, rheumatic pains affecting different parts of the thorax, and other diseases of the breast, have been much more frequent in this month than usual, caused perhaps rather by the too early change of dress, than the peculiar constitution of the air. Bleeding in most was beneficial; a repetition was sometimes necessary. Mild diaphoretics, anodynes, pectorals, and warmth, were generally successful. The ulcerated fore-throat has just begun to shew itself, with its usual symptoms; it yields to the common remedies, and is exasperated, as it always has been in general, by bleeding and large evacuations. A cataplasm of Ther. Androm. with a small quantity of Sal. C. C. spread thick, and applied externally from ear to ear, seems to have afforded speedy relief in some cases, not however omitting cordials internally at the same time.



Observations on the Weather, &c. in July 1754.

Barometer.

Highest  $30\frac{2}{16}$ .      Lowest  $29\frac{3}{16}$ .

Greatest variation in one day  $\frac{5}{16}$ .

Common station 30.0.

Thermometer within doors.

Highest 68 degrees, the 22d. Wind S.E. Very warm.

Lowest 60.

Greatest variation in one day 5 degrees.

Common station 62 degrees.

The last month ended cool, showery, with brisk westerly winds; the beginning of this was fair, clear, and temperate: towards the middle it became more wet and cloudy, and continued so, with the intervention of a very few warm days, to the end of the month. The wind during the whole was variable, but kept generally to W. or S.W. and sometimes pretty brisk.

About the beginning of the month, several were attacked with the *erysipelas*, affecting chiefly the head and face, though sometimes appearing on other parts of the body. Mild diaphoretics, with anodynes to abate the painful foreness, not to stupify; emollient clysters, to keep the belly open, not lax; diluting liquors moderately in regard to quantity, and rather cool than hot, in a few days restored the patients to

their usual health: nitre dispirited them; and, without some anodyne at night, they were disposed to watchfulness and delirium, as in the small-pox. As the month advanced, apoplexies and paralytic complaints became very frequent, and we still hear of one or other almost daily attacked. To what can this be owing? Sudden transitions from heat to cold, or from cold to heat, often produce these complaints: but, excepting a day or two, the weather has been uncommonly equal; and none of the sensible qualities have remarkably predominated. If nothing in the constitution of the air appears capable of producing such complaints, to what other general cause can we have recourse? In respect to diet, we change nothing in our common course, except a more plentiful use of vegetables; in which term must be understood to be included fruits of all sorts, as well as roots and greens. But these have seldom been considered as productive of such disorders.---They may, however, by accident, contribute in some constitutions to bring on the above-mentioned disorders, that is, by their quantity.---We seldom are called to apoplectic patients, but, upon enquiry, we learn that some unguarded meal has preceded, and that, within a very few hours before the attack, they have made a repast which, either in respect to quantity or quality, the by-standers themselves admit to have been improper.---It is therefore mentioned as a caution to all, who either from their make and time of life have reason to  
apprehend

apprehend they are exposed to the disease above-mentioned, or have already had some slight attack of it, that as they wish to prolong their lives, they would avoid full meals, but more especially suppers. The constant and abundant use of tea, though for a very different reason, seems likewise capable of contributing its share to the increase of these disorders: and, indeed, the continued use of this exotic seems to demand the attention of the faculty, and their steady and unanimous opposition, if its effects should appear to be as certainly, though insensibly, injurious to the body, as the consumption of time, and its other ill consequences, are undoubtedly to the state.

*Observations on the Weather, &c. in August 1754.*

Barometer.

Highest  $30\frac{2}{10}$ .      Lowest  $29\frac{7}{10}$ .

Greatest variation in one day  $\frac{3}{10}$ .

Common station  $30.0$ .

Thermometer within doors.

Highest 69 degrees at night, the 20th. E.

Lowest 60.

Greatest variation in one day 4 degrees.

Common station 64 degrees.

As the last month ended, so this began, cloudy, cool, and wet: the weather continued thus till

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about

about the middle, when the wind shifted to the E. and brought a fair, warm, and agreeable season. After a storm of thunder, lightning, and heavy rain, the 22d in the night, with a S.E. wind, the air continued sultry, and the weather wet, till the period when this account concludes.

The motions of the quicksilver, both in the barometer and thermometer, have been very slow, and the rise and fall in each by short gradations. In the thermometer, suspended in the shade without doors on the 11th in the morning, the mercury stood at 58; 2 degrees lower than within doors, any time this month; and rose the 15th and 19th to 75 at noon, the highest it was observed to be.

A dangerous remittent fever, and the small-pox, have been the most common acute diseases that have occurred in this month. The former was fatal to many; and though it often continued to the 14th or 17th day, yet it was extremely difficult to discover the *juvantia* or *lædientia*, except in regard to bleeding, which was most commonly injurious, as those who lost the most blood, and at the greatest distance from the first attack, suffered the most, were the soonest delirious, convulsed, and carried off. The early application of blisters seemed no less injurious. A gentle emetic, and mild calming diaphoretics, the bed-cloaths light, the room airy, but not cold, with thin diluting liquors to satiety, not  
to

to load, were circumstances of moment to the patients ease, as well as recovery.

The small-pox were frequent in many parts of the city and eastern suburbs especially. In general the kind was mild, distinct, and favourable. Out of sixteen, who had the disease in a certain district, of different ages, one only died; but in common a much larger proportion miscarried. And it is to be remarked, particularly, that though in general the small-pox was of the sort described, yet where it was otherwise, it was so in an extreme degree, with an uncommon proneness to malignancy. In two cases that occurred, where the load of small-pox was not remarkably great, the subjects young and healthy, and no obvious mismanagement, large livid *petechiæ* appeared soon after the eruption, daily increasing in extent and deepness of colour to the 3d or 6th, when, after days and nights of incessant anxiety and delirium, and the fruitless application of such remedies as seemed the most suitable, the disease proved fatal. The author does not remember ever to have seen instances of so virulent a kind, appearing at a time when the general tendency was to the mildest and most favourable.

*Observations on the Weather, &c. in September  
1754.*

## Barometer.

Highest  $30\frac{5}{16}$ .      Lowest  $29\frac{9}{16}$ .Greatest variation in one day  $\frac{2}{16}$ .Common station  $30\frac{2}{16}$ .

## Thermometer within doors.

Highest 67 deg.      Lowest 57.

Greatest variation in one day 7 degrees.

Common station 63 degrees.

The weather during this month has been uncommonly dry, the air, for the most part, temperate and serene; sometimes approaching, in the middle of the day, to fultry, whilst the mornings and evenings were rather cold than temperate. On the 7th and 8th we had some gentle showers, the wind S. W. and somewhat high; the rest of the month was dry, and the wind northerly.

Choleras, inflammations of the bowels, rheumatisms, and intermittents, have been the most common diseases; but a dangerous remittent fever, though not very frequent, has been the most alarming; the access is commonly vehement, the rigor like that of a regular tertian, the subsequent heat intense, which generally continues so long as to shew that it is not of this genus: partial sweats succeed, which afford no relief,

relief, but leave the lassitude and pains of the head and back as afflicting as at first. In this state it is common for those who are called in, to order bleeding. The blood is florid, not very dense; the serum of a deep yellow; the urine at the same time is crude and high-coloured. Bleeding often mitigates the febrile symptoms considerably; but they return in twenty-four hours, and induce some to bleed a second time. The respite from this second bleeding is frequently more perceptible than the first, but a delirium often follows the next night, with a dry tongue, quick pulse, high-coloured urine, loose acrid stools, catchings, watchfulness, and the most alarming symptoms. Now and then they hold out to the 17th or 18th day, but more commonly drop off about the 14th or 15th.

*Observations on the Weather, &c. in October*  
1754.

Barometer.

Highest  $30\frac{4}{10}$ .      Lowest  $29\frac{2}{10}$ .

Greatest variation in one day  $\frac{5}{10}$ .

Common station  $30\frac{1}{10}$ .

Thermometer within doors.

Highest 65 deg.      Lowest 52.

Greatest variation in one day 7 degrees.

Common station 56 degrees.

Thermometer

Thermometer without doors, in the morning.

Highest 64.           Lowest 43.

Greatest difference betwixt morning and noon on the same day 15 degrees, *viz.* on the 15th instant, from 43, the lowest, to 58.

Greatest variation betwixt any two mornings 11 degrees, *viz.* from 44 to 55, between the 8th and 9th instant.

Common station 54 degrees.

If the preceding account is more prolix, it is with a design to make it the more useful: the reader will be pleased to remember, that it is a record of facts, which though at present seem but little interesting, yet, in future time, may be of very important use. What instruction would not something of this kind have afforded, had it commenced a century ago, and been regularly continued to the present time?

The end of the last month was for the most part fair, clear, and temperate, and likewise the beginning of this. On the 6th we had the first shower that had fallen for some weeks, and on the 9th some heavy rain: except some intervening showers, the rest of the month was generally fair, and the weather favourable as to heat; now and then a few warm days, with very little wind, and at other times a brisk cool westerly breeze, or northerly and cold.

The fever, mentioned in the last account, did not wholly disappear till the weather became more moist and cool; the preceding adult temperature



perature having manifestly contributed to increase it.

Rheumatic pains affecting various parts about the thorax, intermittents, and some inflammatory rheumatisms, are now more common, which generally yield to the ordinary treatment.

But before we altogether dismiss the fever above-mentioned, it may not be improper to remark, that scarcely any thing in the practice of medicine requires greater judgment, than to determine, at the access of fevers, whether bleeding is proper or not, and to what quantities. In the present instance, moderate bleeding once, seldom was beneficial, but to repeat it, was most commonly injurious. The writer does not say this with a view to insinuate, that none but a few are judges, in order to promote their advantage; but merely with a design to prevail upon those who are often first called, to consider, that if the fever is of the low depressed kind, they are taking away that force which will ere long be wanted, and which no art can restore.

Next to bleeding, blisters are commonly applied, and they often follow each other immediately; so that one often finds bleeding, blistering, sweating, and perhaps a repetition of all, have been promiscuously ordered in the space of a very few days, while, from the general disorder, it was scarcely possible to determine whether any, or which of these processes was necessary. These things are not said with a view to accuse or reproach, but to excite a just and necessary

cessary consideration of what is proper, and not what is customarily done. Bleeding is, doubtless, often necessary in fevers; the pulse, the constitution, or the season, mostly point out the time and the quantity; which, if it is at all proper, is most commonly so within the first four, five, or six days. This evacuation, with diluents and proper regimen, will often take off a fever without any other assistance. But in regard to blisters, their early application must in most cases be prejudicial. Where bleeding is proper, they are commonly improper; they cannot take off a fever, they have no tendency to it, any otherways than by keeping up the languent circulation, where the pulse rather grows feeble, and the strength declines; here they are a noble remedy: a prudent succession of them often does wonders towards the acme of the fever, and not only promotes a salutary crisis, by the stimulant invigorating quality, but by opening a favourable drain for the critical discharge itself. We lose these advantages if we blister early; we hurry on the already too precipitate course of the blood and juices, and deprive ourselves of a resource, than which medicine hardly affords any one more efficacious. Emptying the first passages prudently at the first is scarcely ever prejudicial in this or any other fever: bleeding in this is most commonly injurious; and blisters early applied, I believe, are seldom useful in fevers, if not constantly detrimental.

*Observations on the Weather, &c. in November*  
1754.

Barometer.

Highest  $30\frac{3}{10}$ .      Lowest  $28\frac{8}{10}$ .  
 Greatest variation in one day  $\frac{6}{10}$ .  
 Common station  $29\frac{8}{10}$ .  
 Total of mornings observations  $920\frac{8}{10}$ .

Thermometer within doors.

Highest 60.      Lowest 50.  
 Greatest variation in one day 4.  
 Common station 52.  
 Total of mornings observations 1716.

Thermometer without doors,

	Morning.	Noon.	
Highest - - -	56	64	27th ult.
Lowest - - -	39	47	27th ult.
Common station	48	$52\frac{1}{2}$	
Greatest variation from morn to noon	10.		
Total - - -	1461	1638.	

The quicksilver in the barometer sunk lower on the 9th and 10th instant, than it has been known to do during the course of these observations; so low as to 28 inches 8-tenths, the weather at the same time fair, and, the season considered, clear and temperate; the wind S. E. and rather calm. These circumstances are mentioned, as they are uncommon with a S. E. wind. The quicksilver, indeed, almost always sinks, but seldom

dom low, without very high winds, or much rain, neither of which happened at that time, nor did any remarkable wet weather ensue about this place. It was conjectured that much rain might then be falling in distant parts, which from the daily papers, and other accounts, was soon after found to be the case. And it has more than once been observed, that if the quicksilver keeps very low, with a northerly wind, much snow is then falling to the northward, and perhaps at a very great distance; and also that if it is low with a S. E. and fair, heavy rains are then falling to the southward, though, perhaps, neither snow or rain appear at the place of observation.

The weather during this month, till within a few days of its conclusion, has for the most part been fair and clear, though there have been some dark, cold, and rainy days, but generally clear, temperate, and the winds easterly. Rheumatisms have been very frequent and obstinate. Many have been seized with catarrhal coughs, and consumptive habits have suffered greatly. The fever mentioned in the preceding accounts still continues; the cautions hinted before are still necessary: bleeding almost in the smallest quantity is injurious, and a repetition generally fatal.

## \* R E M A R K S

O N T H E

N E U T R A L S A L T S O F P L A N T S ,

A N D O N

T E R R A F O L I A T A T A R T A R I .

CHEMISTS, who prepare the lixivial Salts of Vegetables, generally take care, by the means of hot water, and sometimes repeated affusions of it, to get every thing out of the ashes that is soluble; and when they evaporate this solution, they employ the salt which is obtained from it as a pure alcali in other operations, either not knowing or neglecting the Neutral Salt, which Boerhaave says † is mixed with it, and is *sui generis*. In an operation which I was lately employed in, the necessity of considering the effects of this Neutral Salt was evi-

\* Written in the year 1736, and inserted in the 5th volume of "Medical Essays and Observations, published by a Society in Edinburgh," page 147.

† Chem. Proc. 14.

dent, and I could determine the genus to which the greater part of it belonged.

An ingenious Chemist of my acquaintance, intending to make a large quantity of *Terra foliata Tartari*, used for that purpose the *lixivial Salt of Fern*, carefully made in the country by a person well skilled in practical chemistry, careful and exact. Some of this salt was fluxed, the rest was a clean lixivial salt; each kind was saturated by itself with strong distilled vinegar, eight or nine times the weight of the salt being sufficient of the vinegar to fully saturate the alkali of both parcels; whereas usually fourteen or fifteen times the weight of the salt is requisite of the vinegar to make a perfect saturation.

The saturated liquors being filtrated, and carefully evaporated to a mellaginous consistence, hissed and crackled where it hardened on the sides of the vessel, and did more so the nearer they came to dryness, shewing hardly any marks of a disposition to flow, which commonly happens when the saline liquor is so far evaporated.

No methods which the operator, who is a very expert artist, could then fall upon, served to make the process succeed.

The Chemist having informed me of the case, we could discover no fault in the materials, vessels, or operation; but, suspecting the Neutral Salt to be the cause of the process not succeeding, we dissolved all the refractory mass in warm water, set it to cool, and had a considerable quantity

quantity of neutral crystals, several of them exactly resembling those crystals delineated in tab. I. of your vol. i: which were procured by Dr. Plummer from *Moffat* water; only ours were more perfect, which was owing probably to the large quantities of materials we had. Most of the crystals were cubical, which, joined differently, and mixed with other salts, made a surprising variety of figures; which cannot well be described in words; but I have sent some of them of different shapes in a box. It was plain from their figure and taste, and by experiment, that common *Sal marinum* made up a great part of what we had; the rest might not unjustly be called partly a *Sal Polycbrest*, partly the essential salt of the plant.

We were obliged to repeat this operation for obtaining those crystals, before we could obtain a Salt which flowed and foliated; the crystals deposited each time were more bitter and more pungent, though in form resembling the first we got; the *Terra foliata* did not flow nor foliate so freely, nor were the foliations so large or so white as usual.

It is with reason then that Boerhaave orders \* a *Sal Alkali purissimum* to be used in the preparation of *Tartarus regeneratus*, or *Terra foliata Tartari*; and the dispensatories which order *Sal Tartari*, direct the chemists to a more certain process than when they are left at liberty to em-

\* Chem. Proc. 67.

ploy what they will. The chemists in town here mostly use the *cineres clavellati* in this process, and succeed very well, or make the salt with large foliations and white; and perhaps this is the only one of all the neutral saponaceous salts, which is more efficacious, the whiter and purer it is.

The principal reason why chemists succeed better in making *Terra foliata Tartari* with *cineres clavellati*, than with any other of the lixivial salts, seems to be, because those who prepare the *Pot-ash* content themselves with letting cold water run through large tubes or vats filled with ashes, till it has washed so much from them as to make a *lixivium* support an egg; by which operation, little of the Neutral Salts are dissolved to mix with the *lixivium*; and probably in drying the *lixivium*, what of the Neutral Salt is in it, is forced by the fire to the surface, to form that crust which it takes in burning the straw that is wetted with it.

That the ashes which remain after the *pot-ashes* or salts are extracted, contain much of the Neutral Salt, is evident from their serving so well the purposes of agriculture, being preferable to sea-salt for all such purposes.

How such a quantity of sea-salt should be contained in vegetables, is an enquiry foreign to your design, and therefore I shall not mention my opinion of this phænomenon: I believe it will not, however, be unnecessary to remark, that Physicians ought to consider, that the pro-



portion of this Neutral Salt, mixed in alkaline ones, is often different; the more is thus mixed, the less acid is required to saturate a given quantity: hence it frequently happens, that the medicine we intend should be perfectly neutral, is very acid, and entirely disappoints our expectations\*.

With respect to the process for making the *regenerated Tartar*, it may not perhaps be without some use to observe, that the more vinegar is put to it, the *foliations* will appear larger and

\* It is common here to prescribe one scruple of Sal Absinth. to half an ounce of Succ. Limon. To learn how far this proportion was just, I procured six parcels of Salt of Wormwood, and six of Salt of Tartar, from shops in different parts of the town: I procured likewise a quantity of lemon-juice, sufficient for all the trials I intended. Half an ounce of this juice was saturated with 18 grains of one of these parcels, and required 52 of another to reduce it to the same degree of neutrality. This difference was owing to the Neutral Salt contained in the last, which was really procured from Wormwood ashes, and carefully lixiviated with hot water.

The specimens of Salt Tartar were more alike; they varied only from 18 or 19 grains to 23 or 24. The fresh Salt of Tartar is a pure alkaline salt; if it is exposed to the air, it absorbs the acid contained in it, and thus becomes neutral in proportion to the time it has been kept, or as it has been exposed to the air.

Wherefore, in directing the common saline draughts, it would seem that 24 grains is a much more suitable proportion than one scruple; and if to this mixture we add a scruple of some absorbent, as crab's eyes, &c. we shall probably have a mixture more perfectly neutral, than we shall be able in common to obtain by any other method of prescribing.

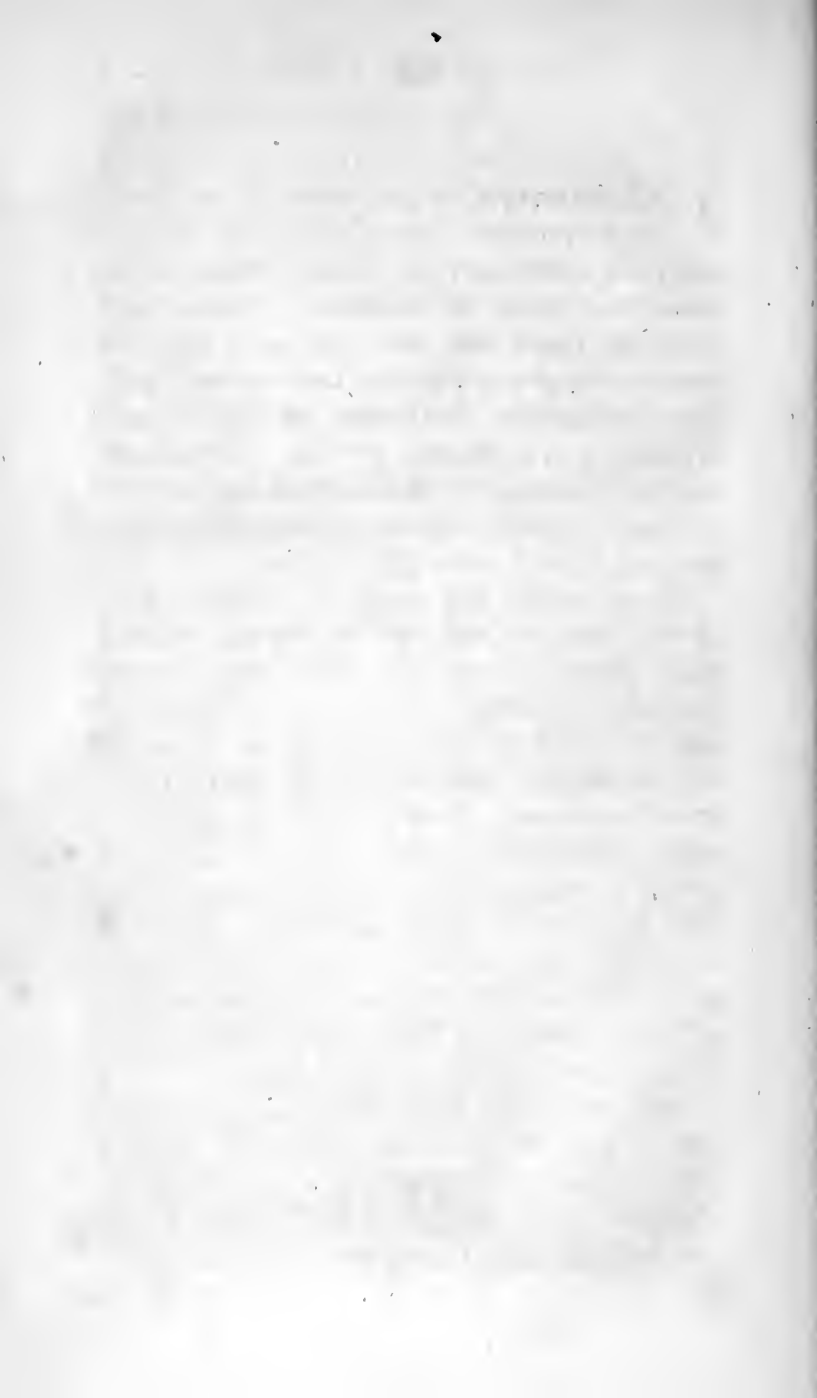
whiter, though it is the more expensive, because, whatever vinegar is bestowed on it, the operator must expect very little more salt than the weight of the alcali made use of.

The addition of somewhat more than the ordinary proportion of vinegar not only contributes to render the salt finer, as by repeated trials we found it did, but also prevents it from becoming too alkaline; for was it to be brought to an exact *punctum saturationis* before it is committed to the fire, the heat necessary to evaporate the liquor and flux the mass would render it more of an alkaline corrosive, than of a neutral saponaceous nature. This induced me to remark, that its whiteness may be esteemed as a mark of its goodness, it arguing that a proper quantity of vinegar has been used; and it may be rendered whiter and more pure by repeating the dissolution, evaporation, and fluxion.

The *Tartarus regeneratus*, taken from the quantity of half a drachm to two drachms, is an excellent alterative and diuretic; and from three to six drachms is a very mild cathartic, that never sinks the spirits, or raises any violent disorder, and particularly is serviceable to several dropical patients: of its service this way allow me to mention one history.

A married gentlewoman, forty-eight years old, childless, a little corpulent, was repeatedly affected with an immoderate discharge of the *menses*; soon after her belly began to swell, her legs grew oedematous, and all the symptoms of a dropisy

dropfy appeared. She was treated with the ftrong and gentler cathartics, diuretics, aperients, and corroborants ; but this bad circumftance always attended evacuants either by ftool or urine, that they never failed to produce a difcharge of blood from the *vagina*, which funk her prodigioufly. Corroborants, efppecially of the astringent kind, foon ftopt the flux ; but, at the fame time, contributed to increafe the fwelling, by leffening the difcharge by urine and ftool. She then began to take three drachms of the *Terra foliata Tartari* once or twice a week ; it gaye her two or three ftools, with a large evacuation of urine, without exciting the menftrual difcharge, or affecting her ftrength : fhe continued the ufe of it for upwards of a year, without increafing the dofe, or attempting any other relief than what that gave her, which was very great. Whether it would have made a complete cure, I cannot fay ; for, having taken a rough purgative, fhe had her days fhortened by it.



**T**HE following *Essay on Amber* was printed in the *Philosophical Transactions*, when curiosity was much excited upon the origin of this valuable production: besides the authorities quoted in this place, the reader may meet with many others in *James's Medicinal Dictionary*, under the word *Amber*: *Philosophical Transactions*, N<sup>o</sup> 19, p. 349; N<sup>o</sup> 248, p. 5; N<sup>o</sup> 468, p. 322: *Dictionnaire Raisonné-Universel de Matière Medicale*, tom. vii. p. 209, et suivant: *Macquer Dictionnaire de Chimie*, sous le mot *Succin*. Edit. 1778.

Though *Amber* was known to *Antiquity*, *Frederic I. King of Prussia*, was the first who rendered it an important commercial object. *Amber* is very common in this kingdom, and in some places lies almost on a level with the surface of the ground, so that the labourers collect considerable quantities of it in tilling the land. There are some parts of *Prussia*, where neither tree nor herb vegetates, where the ground is covered with a substance resembling the bark of a tree. *Frederic* caused this substance to be removed, under which was found a bed of black earth, and beneath this a bed of wood, in the veins of which *Amber* was discovered, greater in plenty in proportion to the quantity of this wood.

Some years ago a considerable quantity of fine *Amber* was found in *Saxony*, which has furnished four dissertations, printed in the *Collection of the Curiosities of Nature*; an extract of which may be seen in the *French* edition of *Henkel's Pyritologia*.

*It is said that the King of Prussia has a burning mirror of Amber, that is a foot broad, and free from blemish. There is in the cabinet of the Duke of Florence, a fine column of Amber, six feet high, and of the most perfect lustre: there are also vessels made of this substance with infinite labour. We are informed, that some years ago there was an artist in Prussia, called Samuel Som, who had not only the art of clarifying Amber, and rendering it transparent, but also of dying it of any colour, and even to soften it and inclose insects in it, to make a gain of selling it to persons curious in these rarities.*

Editor.

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EXTRACT OF AN ESSAY  
UPON THE  
ORIGIN OF AMBER\*,

Read before the ROYAL SOCIETY, March 1, 1743-4, p. 21.

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**A**FTER all that has been wrote upon the subject of Amber, its origin is yet, in a great measure, unknown. Several ingenious men have searched into this affair upon the spot where the Amber is principally gathered: they have related their observations with great candour; they have given us the conclusions they drew from the facts they discovered; yet without fatiguing us entirely about many particulars.

But as a knowledge of the nature of things can only be acquired from the things themselves, I have carefully collected every material fact I could meet with from those who were best acquainted with the natural history of this subject, and whose industry and accurateness in observing, and good faith in relating their observations,

\* Philosophical Transactions, N<sup>o</sup> 472.

have been generally esteemed unexceptionable. Of these I shall only mention *Wigandus*, *Hartman*, and *Sendelius*, the last who has wrote, as far as I know, professedly upon this subject.

The evidence which these gentlemen afford us I have endeavoured to throw together, in the most natural order I could, without respect to any hypothesis: but as this enumeration of facts admits of no abridgement, my papers would take up too much room in your memoirs, therefore I can only refer to the essay itself. Upon this foundation of facts is built a discussion of the following problems:

1. Whether Amber is not strictly a marine production; or is reduced by some quality of the sea-water into the condition we find it in? Or,
2. Whether it is not to be considered only as a bituminous body, generated in the bowels of the earth? Or, lastly,
3. Whether it is not, in its origin, a vegetable production, a resin; but changed into its present form by a mineral acid?

It will only be necessary, in this place, to mention, that, after having shewn the difficulty of maintaining the two first, I have undertaken to support the last of these opinions.

I endeavour to make it appear, that Amber was, in its origin, a vegetable resin \*; the pro-

\* From the subsequent observations on mixing oils, resinous and pinguous substances, it appears that the author retained the opinion he had thus early adopted. *Editor.*



duct, perhaps, of the fir or pine kind \*; by considering the appearance of the substance itself: and that though it has some distinguishing properties, yet it has many others, which are common to an indurated resin. Its aspect, its texture, its form, are arguments for this. The bodies which it is known to inclose are urged as proofs, that this inclusion could not happen in the sea, nor in the earth, but upon its surface; as the included objects are mostly animals, mostly volatiles too: very few reptiles, except such as are often found aloft in trees, as ants, spiders, &c. and scarcely ever any aquatics, are found in Amber. And, I believe, I may challenge all the cabinets of the curious to produce one instance of a marine body having been found naturally inclosed in Amber. That there are several fictitious ones is granted.

That this resin, with the trees which afforded it, were buried in the earth by the deluge, or by some such violent renversement, and there constitute the proper veins of Amber, I likewise endeavour to make appear, from the same evidence of facts. The substance of which these veins consist hath several genuine characteristics of wood still remaining. The texture of this substance is often an undoubted proof of what it hath been; being fibrous, and, when dried, swims in water, and burns like other wood. The

\* This was the suggestion of Agricola, and of some more recent writers. *Editor.*

Amber is not disposed in these veins in one continued *stratum*; but lumps of it are irregularly diffeminated through the whole of what I call the woody mafs.

A difficulty, which naturally offers itself in this place, is attempted to be removed: What proof have we that this, which is called wood, is not mere fossil wood, the product of creating power, exerted in the place where it is now found? It is answered, that as there are undoubted proofs, that many substances now occur, where they were not originally framed, we are under no greater difficulty in accounting for the change of place in one than the other. It is known that the *exuviz* of fishes are sometimes found on the tops of the highest mountains. The bones of large animals are met with at prodigious depths, where nature never formed, nor art conveyed them. Whole woods are found under-ground. The cause that effected these was capable of the other.

Yet, allowing these allegations to be just, by what causes is this change produced? It is urged, that time is one of the causes; and that the rest is completed by the acid of the earth, a vitriolic mineral acid. It is proved, from the facts above-mentioned, that such an acid is present wherever Amber occurs in its *proper matrix*; that it is sometimes found in the Amber itself; in its genuine appearance; that the acid of the salt of Amber appears, from experiments, to be vitriolic; that common turpentine (a known vegetable

vegetable resin) affords, by proper management with a vitriolic acid, a considerable portion of the same chemical principles that Amber does; that those pieces of Amber, which have been found soft and imperfect, are nearly related to a vegetable resin: in short, it is endeavoured to be proved, that we have the ingredients of Amber in our power, and that nothing is wanting but a successful application of them to each other, at least to procure the medicinal preparations of Amber at an easy expence. Time and repeated trials may, perhaps, ripen this beginning, in somebody's hands, into an happy useful imitation of this valuable substance.

This account is concluded with an enquiry into the medical virtues of Amber, and some of its principal preparations. It is observed, that a substance of so firm a texture, as scarce to yield to any common *menstruum*, is not likely to produce any considerable effects upon the human body; and that, indeed, there are very few genuine instances recorded of any: that busy imagination might, probably, at first, introduce it, prejudice support it, and engage men of parts and authority to recommend it to their inattentive successors.

I shall finish this abstract with remarking, that were some of the leisure moments of men of great abilities and experience devoted to inform the world of the inefficacy of such methods and medicines as they have proved to be so,

Phyfic

Phyfic would be reduced into narrower bounds; they would merit the thanks of every one in the profession; and posterity, at least, would commend their endeavours.

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O B S E R V A T I O N S  
O N T H E  
M A N N A P E R S I C U M\*,

Read before the ROYAL SOCIETY, April 26, 1744.

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**I**T does not appear very plain, from any thing that has occurred to me in the writings of the elder Greek physicians, that they were much, if at all, acquainted with any substance that now goes under the name of *Manna*. They had the term, but applied it to a subject very different from what we do at present. The ὑποσεισμα τῆς Λιβανῶν, or the *Micæ thuris concussu elisæ*, the bits broke off from the *olibanum* in carriage, was the substance they knew by that name.

If the *Arabians* did not first of all introduce some kind of purging *Manna* into practice, they at least rendered the use of this drug more common and extensive. Their country afforded several species of it; which being familiarly

\* Philosophical Transactions, N<sup>o</sup> 472, p. 86.

known, is, perhaps, the reason why no descriptions have been left sufficiently clear, whereby to distinguish them from each other. Whoever has consulted the Arabian writers, or the best of their commentators, will allow that their accounts are defective.

That they had three sorts of this drug, distinguished by the names of *Manna*, *Tereniabin*, and *Siracost*, is certain; but whether these are now known, or by what appellations, has been very much disputed.

Rauwolf, in his Itinerary published by Ray, and Tournefort, in his voyage to the Levant, have given the clearest intimations of any writers that I know of: if to these we add Clusius, we have all that we are to expect of certainty, amongst those who have mentioned it; they being eye-witnesses of what they wrote. Yet the descriptions of these are either so imperfect or unknown, that a very late writer upon the *Materia Medica*\*, either not having seen or understood them, has fallen into a mistake about the *Manna Arabum*, and his authority may perhaps mislead others.

My worthy friend Peter Collinson, having procured a sort of *Manna* from a gentleman at Petersburg, under the title of *Manna Persicum ex planta Al-Hagi Maurorum*, was pleased to favour me with a specimen of it. I consulted the principal writers on the *Materia Medica*; and

\* Geoffroy Tractat. de Mat. Med. vol. ii. p. 586, &c.

finding their opinions to be frequently opposite, and their accounts in general perplexed, I imagined it would not be unacceptable to the curious to have such a description of this species as would probably make it clear, that we have one kind of the *Manna Arabum* still extant, viz. the *Tereniabin*, and prevent any future mistakes about it.

The specimen of *Manna* that now lies before me appears, at first sight, to be a dirty reddish brown-coloured mixed mass; which, upon a nearer view, is found to consist of,

1. A great number of globular, crystalline, almost pellucid bodies, of a yellowish white colour, and different sizes; the biggest not much exceeding a large coriander-seed, or a very small pea. They differ from grains of Mastich, in being more upon the reddish cast; but in figure and transparency vary not much.
2. Some small sticks like prickles, and others like footstalks of leaves or fruit.
3. A few narrow-pointed firm small leaves.
4. A large quantity of long reddish-coloured pods, of a sweetish gelatinous taste, containing from one to six or seven hard, irregular, somewhat kidney-like seeds, which to the taste are very acerb. And,
5. Some sand and earth. Four ounces of the *Manna*, dissolved in warm water, left one ounce or something more of these in the filtre.

The globules (N<sup>o</sup> 1.) are hard, and break between the teeth like fugar-candy; they are of a pleasant sweet taste, with much less of the *Manna* relish than the Calabrian; but with enough to discover to what family this substance belongs.

The sticks, leaves, pods, &c. seem to be parts of the plant that produces the *Manna*. Some of the seeds have been sown, and proved so fresh as to afford some plants of the *Albagi*.

About the year 1537, when Rauwolf wrote his Itinerary, it appears, that large quantities of this kind of *Manna* were brought from Persia to Aleppo, where it was then known under the name of *Trunschibil* or *Trunschibin*; a corruption, doubtless, of the antient *Terenjabin*; or, as it ought to be wrote, according to Deusingius\*, *Terengjabim*.

Rauwolf informs us, that this species of *Manna* was gathered from the *Albagi*; a plant which is minutely described by Tournefort†, who also confirms the account which Rauwolf had long before given, with the following particulars:

“ It is chiefly (says he) about Tauris, a city  
 “ in Persia, that it is gathered, under the name  
 “ of *Trungibin* or *Terenjabin*, mentioned by Avi-  
 “ cenna and Serapion. Those authors thought  
 “ it fell upon certain prickly shrubs; whereas it  
 “ is only the nutritious juice of the plant.”---He  
 adds, “ that, during the great heats, you perceive

\* Deusingius Tract. de Manna et Sacch. p. 11.

† Tournefort's Voyage to the Levant, vol. i, p. 247, 248.

“ small



“ small drops of honey upon the leaves and  
 “ branches of these shrubs; these drops harden,  
 “ in grains about the bigness of coriander-seeds:  
 “ they gather those of the *Albagi*, and make  
 “ them into reddish cakes full of dust and leaves,  
 “ which alter the colour, and lessen its virtue.  
 “ This *Manna* is much inferior to the Italian.  
 “ The ordinary dose is from 25 to 30 drams.”

Clusius \* informs us, that the *Tereniabin* of the modern Arabs is gathered from a prickly shrub, such as the *Albagi* is described to be. Avicenna †, according to his present translation, tells us, that the *Tereniabin* falls *super lapides*; but Deusingius ‡ says, that it ought to be read *super Albagi*; and that his translators were led into this mistake from the resemblance betwixt *Al-Hbagier* (the word in the Arabic text, and which signifies a kind of thorny plant, such as the *Albagi* is said to be) to *Al-Hagio*.

It is therefore evident, that the *Manna Perficum*, now before us, is the *Tereniabin*, *Terenjabin*, *Terræjenbin*, or more properly the *Terengjabin*, of the old Arabians, and of Clusius; the *Trungibin*, or *Trunschibil*, of the latter, of Rauwolf and Tournefort; very probably, the *Manna Mastichina orientalis* of Matthioli and Bauhine; as it is the *Mastichina* and *Albagina* of Geoffroy; though this author makes the *Tereniabin* a species

\* Clus. Exotic. vol. ii. p. 164.

† Avicen. Oper. tom. i. p. 404.

‡ Tract. de Manna, p. 19.

of *Liquid Manna*\*, in complaisance to his countryman Bellonius; who, though in general a diligent observer, yet, in this case, was misled by the Caloyers, or Monks of Mount Sinai.

Bellonius says, in his Observations †, and more largely in his Treatise *de Arboribus perpetua fronde virentibus*, that these Caloyers collect a kind of liquid *Manna*, which they call *Tereniabin*; that this species was known in the shops at Cairo by the same name; and that this is the *Mel roscidum* of Galen, and the *Mel cedrinum* of Hippocrates.

I think it is very plain, that Bellonius was mistaken in the first part of his assertion, from what has already been advanced. The Caloyers told him, that they called it *Tereniabin*; and he takes it for granted, that it was the *Tereniabin* of the old Arabians, contrary to their own accounts supported by the testimony of their successors, who are known to vary as little as any people whatever from the traditions and customs of their predecessors, and still retain a great many of their appellations. For proof of this, I need only refer to the accounts which Rauwolf, Tournefort, and Dr. Shaw, give us of those people.

That this liquid *Manna* was the  $\Delta\rho\omicron\sigma\acute{\omicron}\mu\epsilon\lambda\iota$  seu  $\text{A}\epsilon\rho\acute{\omicron}\mu\epsilon\lambda\iota$  of Galen ‡, and the  $\text{M}\acute{\epsilon}\lambda\iota$   $\kappa\acute{\epsilon}\delta\rho\iota\upsilon\omicron\nu$  of Hippocrates ||, (supposing there is no mistake in the

\* Traët. de Mat. Med. tom. ii. p. 587.

† Bellonii Observ. apud Clus. p. 129.

‡ Galen de Alem. Facult. l. iii. c. 39.

|| Hippocrat. de Ulceribus, p. 876. Edit. Foesii.

text), seems very probable. The description which Galen has left of the *Mel roscidum*, and the manner of collecting it on Mount Sinai in his time, tallies exactly with Bellonius's account; and thus far, I believe, all authors agree: but that the virtues of *Manna* were known so early as in the times of these two authors, will be difficult to prove.

Galen takes notice of this *Mel roscidum* more as a curiosity than a medicine. He no where, that I know of, mentions its use, or describes its qualities. He introduces the account of it with a *Memini aliquando*, and says, that the *Mel roscidum* was rarely met with in his country, but was gathered at Mount Sinai every year: and, indeed, from the manner in which it is spoken of by an old Greek writer in Athæneus, as cited by Salmasius, it would seem that it was only used for pleasure, as an agreeable sweet, *Melle ipso suavius*; and probably continued to be of no other use. Mesue tells us\*, that Galen mixed *Manna* with *Scammony*. In the spurious piece *de Dynamis*, ascribed to Galen, *Scammony* is ordered to be mixed with honey; but he never once mentions *Manna* in any of his extant writings. As Galen is known to be very minute in his account of the *Materia Medica* of that time, his silence is a strong argument against the supposition, that even the *Mel roscidum* was in phar-

\* Mesue de Simpl. c. 8.

maceutic use, much less any other species of *Manna*.

If Galen was unacquainted with this substance, it is very probable that Hippocrates was so likewise; since a drug that must have made a considerable figure in his *Materia Medica*, would not have soon been struck off the list, or dropped into oblivion and disuse.

But how shall we get rid of the Μέλι κέδρινον; the name sufficiently intimating what substance was intended? Perhaps Foesius's suggestion may help us. He thinks, that the words might have been read with a comma intervening, whereby we should have had two distinct well-known substances, honey, and the resin of the cedar; two simples that were then, and continued long after, in familiar use; instead of one, which he mentions no where else, and seems to be unknown some ages after.

Upon the whole, I have not hitherto met with evidence sufficient to induce me to believe, that either the *Mel roscidum*, or any kind of *Manna*, was in common medical use either with Hippocrates or Galen. Actuarius mentions it once\*, and, as I know of, only once: he makes it a purgative, and to be somewhat stronger than *Cassia*.

It is now pretty generally known, that the *Mannas* in use are not a *Mel aerium*, or honey-

\* Actuar. Method. Medend. l. v. c. 8.

dew, as was long believed, but a *Succus proprius* issuing out of some particular trees, at proper seasons, and in some climates only; and that, during the summer's heats, a great number of vegetables, in almost all the temperate countries, afford a juice somewhat a-kin to Manna, from whence the bee collects and prepares her honey. It may not, however, be amiss, nor very foreign to our subject, to exhibit a short account how the *Manna Officinarum* is collected.

In Calabria and Sicily, in the hottest part of the summer-months, the *Manna* oozes out of the leaves, and from the bark of the trunk, and larger branches, of the *Fraxinus*, or Calabrian ash. The *Ornus* likewise affords it, but from the trunk and larger branches only, and that chiefly from artificial apertures; whereas it flows from the *Fraxinus* through every little cranny, and bursts through the large pores spontaneously.

What is got from different parts of the tree acquires different names; the trunks generally afford those large white pieces to which we give the name of flaky; but the finest of all is such as is collected from artificial incisions, in which little straws, &c. are purposely placed in such a manner, as that the flowing juice may concrete upon them, and form those long, white, cylindrical, perforated pieces, which are so much valued.

This juice is secreted in the largest quantity betwixt noon and evening. In the night it is condensed, if the season is dry, otherwise the

*Manna*

*Manna* is spoiled: they scrape off the small with wooden knives, early in the morning, and gather the larger flakes; both which are afterwards dried upon clean paper in the sun, till they stick no longer to the fingers; and the different sorts are then carefully packed up for use and exportation.

*SINCE* the publication of the succeeding paper, some Gentlemen have with great humanity united together to promote the recovery of persons apparently dead, especially from drowning, well known by the name of the HUMANE SOCIETY; for the establishment of which, the public is particularly indebted to the activity and benevolence of Dr. HAWES.

This Society has published the proper methods of treating persons in these unhappy circumstances, and gives a reward of two guineas to the persons employed, if the case be unsuccessful, provided the person has not been more than two hours under water, and the methods laid down by the Society have been persevered in for the space of two hours. If the person recovers, the reward is four guineas.---The Society is supported by public subscription.

As the subject is interesting to the community and public at large, I have thought it not improper, briefly to subjoin the methods of treatment, found by the Society to be most successful on these occasions.

I. The body should not be rolled on the ground, or over a barrel, nor lifted up by the heels, or be any other way roughly handled or violently shook; but be removed to a convenient place, lying as on a bed, with the head a little raised, in as natural a position as possible.

II. The body, well wiped with a cloth, should be placed in a warm bed or blanket; but not too near  
a large

a large fire. Bottles of hot water should be laid to the bottoms of the feet, joints of the knees, and under the arm-pits. A warming-pan moderately heated, or hot bricks wrapped in cloths, should be rubbed over the body, particularly along the back. The natural warmth of a healthy person, especially a child, lying close to the body, has been found very efficacious. The room should be kept open and airy, with few persons in it. The shirt of an attendant, or skin of a sheep fresh killed and warm, may be used to advantage. Should the accident happen in the neighbourhood of a warm bath, brew-house, bake-house, glass-house, saltern, soap-manufactory, or any fabric where warm lees, ashes, embers, grains, sand, water, &c. can be easily procured, it will be very proper to place the body in any of these, moderated to a degree of heat, very little exceeding that of a healthy person.

III. The body being placed in one or other of the above advantageous situations, various stimulating means should be immediately employed. The most efficacious are :---Blowing with force into the lungs, by applying the mouth to that of the patient, closing at the same time his nostrils :---Throwing the smoke of tobacco up the fundament into the bowels, by means of a clyster-pipe or fumigator; a pair of bellows may be employed till the others can be procured :---Rubbing the belly, chest, back, and arms, with a coarse cloth, or dry salt, so as not to rub off the skin; or with a flannel dipped in brandy, rum, or gin :---Applying spirits of hartshorn, volatile salts, or the like, to the nostrils, and rubbing them on  
the



*the temples frequently :---Tickling the throat with a feather, to excite a propensity to vomit ; and the nostrils also with a feather or snuff, to provoke sneezing. The body should at intervals be shaken, and varied in its position.*

IV. *If there be any signs of returning life, such as sighing, gasping, twitching, beating of the heart, return of natural warmth or colour, a spoonful of water may be administered, to try if the power of swallowing be returned ; if it be, a spoonful or two of warm wine, or brandy and water, may be given to advantage, but not before.*

*Early bleeding has been found pernicious, and even fatal ; it is not always applicable, though it may sometimes be employed by a person of skill, to remove or prevent symptoms of inflammation.*

*The above methods of restoring life are applicable to various other cases of apparent sudden death ; whether from hanging, apoplectic and convulsive fits, cold, suffocation by damps or noxious vapours, proceeding from coal mines, confined air of wells, cisterns, caves, or from the must of fermenting liquors.*

*The Rules and Reports of this Humane Institution are printed, where they may be seen more at large.*

Editor,



## O B S E R V A T I O N S

O N A

CASE published in the last Volume of the  
*Medical Essays, &c.* “ of recovering a Man  
 “ dead in Appearance, by distending the  
 “ Lungs with Air. Printed at *Edinburgh,*  
 “ 1744\*.”

Read before the ROYAL SOCIETY, February 21, 1745.

THERE are some facts, which in them-  
 selves are of so great importance to man-  
 kind, or which may lead to such useful discove-  
 ries, that it would seem to be the duty of every  
 one, under whose notice they fall, to render them  
 as extensively public as it is possible.

The case which gives rise to the following re-  
 marks, I apprehend, is of this nature. It is an  
 account of “ a man, dead in appearance, reco-  
 “ vered by distending the lungs with air; by  
 “ Mr. William Tossack, Surgeon in Alloa;”

\* Philosophical Transactions, N<sup>o</sup> 475. p. 275.

printed in part ii. p. 605. vol. v. of the *Medical Essays*, published by a society of gentlemen at Edinburgh; an abstract of which will be sufficient in this place: those who desire an ampler account may consult the article itself.

A person suffocated by the nauseous steam arising from coals set on fire in a pit, fell down as dead: he lay in the pit, “ between half an  
“ hour and three quarters, and was then dragged  
“ up; his eyes staring and open, his mouth  
“ gaping wide, his skin cold; not the least pulse  
“ in either heart or arteries, and not the least  
“ breathing to be observed.”

In these circumstances, the surgeon, who relates the affair, “ applied his mouth close to the  
“ patient’s, and, by blowing strongly, holding  
“ the nostrils at the same time, raised his chest  
“ fully by his breath. The surgeon imme-  
“ diately felt six or seven very quick beats of  
“ the heart; the thorax continued to play, and  
“ the pulse was soon after felt in the arteries.  
“ He then opened a vein in his arm; which,  
“ after giving a small jet, sent out the blood in  
“ drops only for a quarter of an hour, and then  
“ he bled freely. In the mean time, he caused  
“ him to be pulled, pushed, and rubbed, as  
“ much as he could. In one hour the patient be-  
“ gan to come to himself; within four hours he  
“ walked home; and in as many days returned  
“ to his work.”

There were many hundred people, some of them of distinction, present at the time.

This

This is the substance of the account; from whence it naturally appears, how much ought to be attributed to the sagacity of the surgeon in the recovery of this person. Anatomists, it is true, have long known, that an artificial inflation of the lungs of a dead or dying animal will put the heart in motion, and continue it so for some time; yet this is the first instance I remember to have met with, wherein the experiment was applied to the happy purpose of rescuing life from such imminent danger.

Bleeding has hitherto been almost the only refuge upon these occasions: if this did not succeed, the patient was given up. By bleeding, it was proposed to give vent to the stagnating blood in the veins, in order to make way for that in the arteries *à tergo*, that the resistance of the heart being thus diminished, this muscle might again be put in motion.

But, in too many instances, we every day are informed, that this operation will not succeed, though the aperture is made with never so much skill; nor is it likely that it should: when the blood has lost considerably of its fluidity, the motion of the heart, and the contractile force of the solids, are at an end.

Chafing, rubbing, pulling, the application of stimulants, are too often as ineffectual as bleeding.

The method of distending the lungs of persons, dead in appearance, having been tried

T

with

with such success in one instance, gives just reason to expect, that it may be useful to others.

It may be a proper enquiry, In what cases, and under what circumstances, there may be a prospect of applying it with success?

It will at once be granted, that when the juices are corrupted, where they are rendered unfit for circulation by diseases, where they are exhausted, or where the tone and texture of the solids is injured or destroyed, it would be extreme folly to think of any expedient to recover life.

But where the solids are whole, and their tone unimpaired by diseases, the juices not vitiated by any other cause than a short stagnation; where there is the least remains of animal heat, it would seem wrong not to attempt so easy an experiment.

This description takes in a few diseases, but a greater number of accidents. Amongst the first, are many of those which are called sudden deaths from some invisible cause; apoplexies, fits of various kinds, as hysterics, synopes, and many other disorders, wherein, without any obvious pre-indisposition, persons in a moment sink down and expire. In many of these cases it might be of use to apply this method; yet without neglecting any of those other helps, which are usually called in upon these melancholy occasions.

It is not easy to enumerate all the various casualties, in which this method might be tried not without a prospect of success; some of them are the following:---Suffocations from the sulphureous damps of mines, coal-pits, &c.; the condensed air of long unopened wells, or other subterraneous caverns; the noxious vapours arising from fermenting liquors received from a narrow vent; the steam of burning charcoal; sulphureous mineral acids; arsenical effluvia, &c.

Perhaps those, who, to appearance, are struck dead by lightning\*, or any violent agitation of the

\* The following extraordinary instance of recovery, I have inserted from the Reports of the Humane Society for the year 1778, p. 83: it is one of those cases of recovery that cannot be made too extensively public. *Editor.*

“ On Sunday night, July 5, 1778, at about half past  
“ ten, I was called to the assistance of Peter Lucas, aged  
“ eighteen, apprentice to Mr. Hicks in White Lyon-street,  
“ Norton Falgate, who was brought home upon boards,  
“ *to all appearance dead*, from a stroke of lightning. Upon  
“ entering the room, and examining the body, I found  
“ him both stiff and cold, not perceiving the least warmth  
“ in any part of the body or extremities: his fingers and  
“ toes were contracted, his eyes sunk, and his countenance  
“ livid. I immediately with assistance stripped off his wet  
“ cloaths, and with all possible expedition placed him be-  
“ tween blankets made very hot. The assistants then used  
“ strong friction over the whole body. During this, I  
“ made a very large orifice in the basilic vein, and pro-  
“ cured by slow degrees near twelve ounces of blood. Vo-  
“ latile and cardiac medicines were forced into the mouth,  
“ but

the passions, as joy, fear, surprize, &c. might frequently be recovered by this simple process of

“ but for a considerable time to no effect, he being totally  
 “ incapable of swallowing. Large blistering plaisters were  
 “ applied to the whole spine of the back, and to both the  
 “ feet. In half an hour I procured about eight ounces  
 “ more blood, and by the repeated use of volatiles, together  
 “ with the strongest frictions the whole time, at about half  
 “ past eleven I perceived a very slight convulsive motion of  
 “ the diaphragm, or hiccough; which was succeeded some  
 “ little time after by a slight warmth and irregular pulsa-  
 “ tion of the heart; and soon after by a very slow inter-  
 “ rupted respiration. Before twelve I perceived he began  
 “ to swallow, and by steadily using the friction and vola-  
 “ tiles for *an hour* longer, a regular pulsation ensued; the  
 “ lungs performed their office; and a gradual heat, and re-  
 “ covery of every faculty succeeded. About *one* he spoke,  
 “ though not articulately. In the morning he was in a  
 “ considerable fever, in great measure accounted for by the  
 “ stimulus of the blisters, and the medicines applied the  
 “ preceding night: but by the use of antiphlogistic regi-  
 “ men, together with occasional laxatives, he was restored  
 “ to the enjoyment of perfect health in the course of a  
 “ week. Upon the strictest examination of the body when  
 “ first brought home, no external injury appeared, except a  
 “ bruise along the right arm, which I presume he received  
 “ either from the first fall, or at the time of being placed on  
 “ the board for conveyance, either, I think, sufficiently ac-  
 “ counting for such appearance. Upon being questioned  
 “ as to what had happened, he knew nothing but from  
 “ the testimony of his companion, who was not in the least  
 “ affected. It appears that they had been at Islington, and  
 “ were on their return caught in this storm near the turn-  
 “ pike at the London Apprentice, Hoxton; at which time  
 “ the



of strongly blowing into the lungs, and by that means once more communicating motion to the vital organs.

Malefactors executed at the gallows would afford opportunities of discovering how far this method might be successful in relieving such as may have unhappily become their own executioners, by hanging themselves. It might at least be tried, if, after the criminals have hung the usual time, inflating the lungs in the manner proposed, would not sometimes bring them to life. The only ill consequence that could accrue from a discovery of this kind would be easily obviated, by prolonging the present allotted time of suspension\*.

But this method would seem to promise very much in assisting those who have been suffocated in the water, under the above-mentioned circumstances; at least, it appears necessary to re-

“ the above Peter Lucas was struck down at the other’s feet. It further appears from the best calculation, that before he (James Jaques) could procure assistance, to have him conveyed home, and make application to me, an hour at least must have elapsed, during all which time he was in very heavy rain.

“ I am, &c.

“ *White Lyon-street,*  
“ *Norton Falgate.*

“ J. MILWARD.”

Reports of the Humane Society  
for the Year 1773.

\* The Reports of the Humane Society furnish us with many instances of recovery of hanged persons, who had been apparently dead for a considerable time. *Editor.*

commend a trial of it, after the body has been discharged of the water admitted into it, by placing it in a proper position, the head downwards, prone, and, if it can be, across a barrel, hoghead, or some such-like convex support, with the utmost expedition.

It does not seem absurd, to compare the animal machine to a clock; let the wheels whereof be in never so good order, the mechanism complete in every part, and wound up to the full pitch, yet, without some impulse communicated to the pendulum, the whole continues motionless.

Thus, in the accidents described, the solids are supposed to be whole and elastic, the juices in sufficient quantities, their qualities no otherwise vitiated than by a short stagnation, from the quiescence of that moving something which enables matter in animated bodies to overcome the resistance of the medium it acts in.

Inflating the lungs, and by this means communicating motion to the heart, like giving the first vibration to a pendulum, may possibly, in many cases, enable this something to resume the government of the fabric, and actuate its organs afresh, till another unavoidable necessity puts a stop to it entirely.

It has been suggested to me, by some of my acquaintance, that a pair of bellows might possibly be applied with more advantage in these cases, than the blast of a man's mouth; but if any person can be got to try the charitable experiment

riment by blowing, it would seem preferable to the other, for the following reasons: 1st. As the bellows may not be at hand. 2dly. As the lungs of one man may bear, without injury, as great a force as those of another man can exert; which by the bellows cannot always be determined. 3dly. As the warmth and moisture of the breath would be more likely to promote the circulation, than the chilling air forced out of a pair of bellows.

To conclude, as I apprehend the method above described may conduce to the saving a great many lives, as it is practicable by every one who happens to be present at the accident, without loss of time, without expence, with little trouble, and less skill; and as it is, perhaps, the only expedient of which it can be justly said, that it may possibly do great good, but cannot do harm; I thought it of so much consequence to the public, as to deserve to be recommended in this manner to your notice. For though it is already published in a work which is generally read by the faculty; yet, perhaps, it may be overlooked by some, forgot by others, and perhaps, after all the care that can be taken, it may never come to the knowledge of a tenth of those who ought not to be ignorant of it.

P.S. As the representation of an extraordinary fact may perhaps induce some to try the experiment, when occasions like those which are specified in the above remarks occur, it is hoped, that humanity will prompt all such to

favour the public with an account of their success, with the principal circumstances that attended. And as the writer of these remarks has embarked in the design of rendering this fact diffusively known, he would be glad to have it in his power to inform the public, that numerous experiments confirm what this case suggests, viz. the possibility of saving a great many lives, without risking any thing.

White-hart Court,  
Gracechurch-Street,  
September 1744.

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De Diaphragmate fisso, et mutatis quorundam Viscerum Sedibus, in Cadavere Puellæ decem Mensium observatis; Epistola \*

RICHARDO MEAD

JOANNES FOTHERGILL, S.

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**Q**UUM non ita pridem de casu quodam, ut mihi videbatur, omnino singulari, coram te verba facerem, ipse auctor eras, vir clarissime, ut integram rei historiam literis consignarem. Consilio igitur tuo morigerus opus aggressus sum; eoque lubentius, prout mihi persuasum est, id minus ingratum multis fore, si in publicum prodiret, quod tibi privatim non displicuisset. Tantum siquidem et merito ab omnibus tribuitur illius auctoritati, cui nihil antiquius, optatius nihil, quam bonis quibuscunque artibus, de civibus suis, de humano genere, optime mereri.

Quo autem clarius tota res pateat, ab ovo,

\* Philosophical Transactions, N<sup>o</sup> 478, p. 11. Read before the Royal Society, June 16, 1745.

uti dicitur, exordiri animus est, eorum omnium historiam exponens, quorum testis eram, fide, simplicitate, quâ possim, maximâ.

Fœmina generosa 21 circiter annorum, tam ingenio acri et vivido quam forma spectabilis, habitus proceri et gracilis, temperiei ad sanguineam vergentis, firma satis, ut plurimum, sanitate felix, quinto post conceptionem circiter mense, primò prægnans abortum fecit.

Magno suo malo id ei contigit, dum in cognati villâ longe a suis dissitâ hospitio excipitur. Proxima, re jubente, obstetrix advocatur, quæ artis cum primis ignara, et duris tantummodo ruricularum ilibus assueta, uterum tenellulæ eousque duriter tractavit, ut ex vasis laceratis immane adeo sanguinis profluvium exciverit, quantum ars sistere non valuit, usque demum donec gravissima superveniens *Leipopsychia* tam fluidorum motum, quam solidorum vim, impræsentiarum sustulit.

Tandem vero revixit, atque ita convaluit, ut *ore ac membris in pallorem albensibus, ostentui esset multum vitalis spiritus egestum.*

Ex tantis autem malis vix, et ne vix quidem eluctata est, antequam de novo fit gravida. Miseram vero fortem, quâ per totum graviditatis decursum affligatur, referre piget; gravissima namque mala, quæ uterum gerentes exercere solent, hæc nostram et pessime exercuerunt.

Puellulam tamen et suo tempore enixa est, cujus ad historiam, rebus maternis feliciter compositis, quoad morbos, mortem, et cadaveris

ris sectionem, pertinuerit, referendam me accingo.

Recens natæ forma culpa omni carere videbatur: parvula erat et pusilla, cujusque cutis justo flaccidior, et aliquatenus rugosior, se suo nutrimento parcius potitam testabantur; quod nemini matris historiam pensitanti mirum videbitur.

Respiratio a principio ei erat justo paullulum frequentior, paucisque post diebus accedit, tanquam a correpto frigore, gravedo, cum ingenti laticis mucosi ex ore, et oculis, et naribus profluvio, quod quoties ubera nutricis ducere coacta est, fere spiritum infanti præclufit. Et hinc sæpius lachrymæ, hinc etiam iræ, graviores quidem quam adeo teneræ ætati contingere solent quæque sæpius præsentibus metum iniecerunt, ne, cum furore brevi, simul et extremum halitum efflaret.

Commodis vero medicamentis, alvum præcipue leniter ducentibus, a gravedine utcunque liberari videbatur: viribus etiam cum mole pedetentim auctis, in spem adducti sunt parentes olim delicatulæ sanitatem magis constantem fore.

Sæpius tamen quam in plerisque aliis infantibus solet, ex improvise vomitio eam corripit: ejecta nec cibum crudum referunt, nec coctum, sed pulvem quasi purulentam, interdum acidum, sæpe fetidum redolentem: dejectiones etiam justo frequentiores et ejusdem omnino indolis erant. Respiratio interim frequens, laboriosa, noctuque

noctuque difficillima. Hæc eo magis integræ salutis spem minuebant, quo minus auscultabant remediis, quæ in hujusmodi malis plerumque opem ferre solent.

Septimo tandem circiter mense, exanthemata quædam sive tubercula per faciem imprimis, deinde per collum, humeros, thoracem, et ad extremos manuum digitos, diffeminata sunt. Erant rotunda, pulicum instar morsûs lata, rubentia, duriuscula, pruritu molestissima, sensim in vesiculas parvas, sero tenui pellucido tandem repletas, elevata: quæ in squamas furfureas tandem exsiccata, decidebant, relictiis vestigiis livido-rubellis diu permanentibus.

Hæc in conspectum venerunt paucorum post dierum febriculam; quum vero neque ortu, neque decessu justum aliquem typum servaverunt, pruriebant demum insensissime, et nova semper seges demessam subsecuta est, diuturnum fore malum existimabam, altiusque radices egisse, quam quæ febre inordinata eruendæ forent: quumque exanthematum prorumpentium vis atque pruritus indies auferetur, ab impuro aliquo hospite, vitium humoribus inferente, morbum incrementa capere putabam. Ad purgantia itaque mitissima, acidum aut acre obtundentia, eaque quæ ad viscidum solvendum apta viderentur, confugi; et ne forte victûs ratio, quanquam nutrice optime, minus tamen molli alumnulæ competeret, utrasque non nisi jusculis, carnibus tenerrimis, et id genus coctu facillimis alendas jussi. Hinc tuberculorum numerus,  
pruritus,



pruritus, cæteraque mala brevi diminuta fuerunt; atque dubia hucusque falus quodammodo stabilita.

Decimi vitæ mensis initium attigerat, quum parentum jussu nutrix parvulam ablactare fategit. Hoc sine magna molestia tulit: die sexto, propter alvum paulo astrictiorem assuetum sibi solutivum hausit, unde bis dejecit, et bene se habuit.

Sub vesperam enormi vomitione corripitur, ex nulla quantum patuit causa oriunda, quæ sine ulla fere intermissione misellam laceſſebat, donec tragœdiâ per 24 horas circiter actâ, vitæ brevis scenam clausit.

Cuncta, quibus usa est medicamenta, singulatim referre haud opus est. Tam notis plerisque, quam novis auxiliis, intus, foras, novo et pertinaci malo obviam itum est. Præ aliis per totum vitæ (nam et idem erat morbi terminus) decursum, profuerunt tinctura rhabarbari ex aqua cinamomi tenui parata, parca et sæpius repetita dosi exhibita; et linctus ex oleo amygdalino, syrupo pectorali et sapone paucissimo confectus. In ipsis vero extremis angoribus ad vomitum sedandum adhibita sunt ea quæ acidum aut acre temperare, obtundere solent; aromata grata, mitissima, anodyna, demum et ipsa soporifera, at frustra omnia: alvus interea nec sponte soluta est, neque ullis cessit irritamentis.

Atrocis morbi causas atque sedes rimari animus erat; quod, impetrata venia, postridie aggre-  
gredior;

gredior; priusquam vero ad dissectionem manus admoveo, præcipuorum symptomatum conspectum, quibuscum à carceribus ad metam usque colluctabatur, coram sistere haud forte absonum videbitur.

1. Pulsus nunquam non turbatus erat, parvulus, tremulus, frequentissimus.

2. Respiratio semper naturali crebrior, noctu quam interdiu difficilior.

3. Id quoque observandum, quo laxior amictus, etiam interdiu, eo crebrior respiratio; quanto vestis arctior thoracem et abdomen cingens, tanto erat respiratio naturali similior.

4. Decumbenti etiam eadem actio difficilior; inde evenit, ut postquam primum carpisset fomnum, cætera noctis pars plerumque sedenti in gremio nutricis abiit.

5. Tussis, inquietudo, febricula, plus minus, dum ad sanitatem proxime accedere visa est, noctu aderant, et semper quam interdiu molestiores.

6. Vomitiones frequentes sine causa evidenti sæpius eam fatigabant: egesta, cruda, et varia; nunc acida, nunc putrescentia, subpinguia, fetida.

7. Dejectiones sursum egestis simillimæ.

8. Carnium quolibet modo præparatarum odor vomitiones crudeles haud raro ciebat; tanto tamque infelici sensu prædita erat.

9. Quoties alvus astrictior, toties major aderat ad vomendum proclivitas; at ventris fluxus  
quandoque

quandoque enormis et diuturnus plus damni intulit, quam vomitio.

10. Urinam insigni imbutam esse acrimonia docuit odor, spiritus instar urinosi plerumque acris: linteamina colore flavo tingebantur.

11. Et cutis quandoque simili tinctura suffusa est.

12. Humor iste, qui pone aures infantum excerni solet, in nostra etiam maxime fetidus erat.

13. Ingenium ei erat mite, placidum, et malorum patiens: si quando autem accensa esset ira, mirum quantum excandesceret: pari tamen celeritate extinguebatur, alioquin a suffocatione illico periisset.

Crederet, opinor, unusquisque rerum medicarum gnarus, ex historia jam tradita morbum esse insolitum; vim ventriculi imprimis labefactam; turbatas secretiones, vitiatum sanguinem, pulmones male functos officio; forte et hepar culpa non caruisse. Quis vero unquam conjecturis affecutus esset divisum fuisse septum transversum; per ejus rimam in ipsa pectoris penetralia ventriculi amplam portionem et intestinorum partem insignem irrupisse? Hæc vero et plura docuit ipsa cadaveris dissectio, quam postero mane, comite H. Delanoy Pigot, chirurgo Wandsworthiensi perito, institui.

Corpusculum exsuccum, et mirum in modum unius *Νυχθημέρας* intervallo exinanitum lustramus. Quoad partium formam et magnitudinem omnia

omnia recte, nisi quod thorax naturali longior videretur et angustior: costæ siquidem, minus quam solent obliquè positæ, ad corporis axin rectiùs spectabant.

Ilia sinistra livor occupaverat, tanquam gangræna fuissent affecta: circa humeros et brachia haud paucæ vesiculæ cernebantur; quarum aliæ liquore rubello, aliæ viridescenti, flavescenti aliæ scatebant.

Divisam cutem, musculosque tenues subtus jacentes tunica cellularis omni omnino adipe vacua intercurrebat.

Ventre aperto, inferior omenti margo ne vel minima fæta pinguedine, vixque ad umbilicum protensa in conspectum venit. Intestinorum etiam tenuium portio, imusque ventriculi fundus; deinde hepar magnum pallefcens; sub cujus costa latebat vesica fellea, ampla, turgida, fundo sursum, cervice deorsum rectius quam in sanis solitum spectante. Hæc forcice reclusa bilis spissæ, nigricantis ferme fescunciam effudit: at quanquam ex plaga patula haud sine pressura; usque adeo crassa tenaxque erat. Vicina omnia summa flavedine tingebantur. Ileon intestinum hinc inde inflammari videbatur: Colon suo loco absuit: splen, renes, reliqua, sana.

Rescissis deinde cute musculisque, caute sternum ad jugulum usque dividimus. Ast diductis plagæ marginibus, spectaculo, quantum novi, nunquam antea viso, percellimur. In sinistrum quippe pectoris antrum, magna ventriculi portio  
fese

fese intruferat, tam pulmonum lobos, quam ipsum pericardium, et in eo cor, ex integro abscondens.

Diducto tandem ventriculo, quid subtus lateret inspecturi, ilei partem tres circiter palmas longam; cæcum, ejusque appendicem, una cum coli portionē haud parvâ, omnia uno eodemque tecta hospitio detegimus.

Rei novitate commotus, omnia rursus intueor; anceps ne forte vulnus inter secandum diaphragmati inflictum visceribus portam aperuisset. At inspectio quam maxime accurata dubium omnino sustulit; docuitque id olim fissum, divisum vel perruptum fuisse: nam septi hiantis margines perfecte occalluere; neque ullibi conspicienda erant plagæ recentis indicia.

Quum itaque constabat nullam a nobis diaphragmati illatam fuisse vim, cuncta in locis quibus antea collocata erant studiose reponimus, singulatim omnia et adhibita diligentia lustrari.

Septum transversum ab ossē sternō, et cartilaginibus anteriùs diremptum, et ad centrum usque tendinosum, divisum, retractumque, arcum lunatum tensum formaverat; cujus cornua ad costarum fines cartilagosos, dextro latere sternō propiùs, remotius sinistro, pertingebant: sicque sinus effectus est inæqualis, sinistro quàm dextro latere patentior.

Per hunc amplum sinum, sublata viscera, in sinistro thoracis angulo, inter costas et cordis apicem tutas adeo adeptas sunt latebras, ut neque

proprio pondere, neque valida succussione, neque mutato, quacunque demum ratione, corporis situ, in pristinas sedes unquam deduci potuisse judicabam: In *pristinas* dico, quoniam primitus ante partum sic sita fuisse haud temere credendum est. In ipso etenim partu malum accidisse, plurima sunt quæ, ut ita credam, faciunt.

Saccus ille ventriculi, qui ingesta per œsophagum immediate accipit, multo quam solet amplior, suum locum obtinebat; solito etiam pallidior et tenuior: reliqua pars sursum protrusa, deinde oblique retrorsum, supra septi arcum elevabatur; in ipso tamen transitu a margine septi angustatum notavimus.

Has tandem emensus fauces in amplum satis utriculum rursus excrevit; qui arcuato septo, tanquam scamno incumbens, omnem pectoris sinistri ambitum sibi vindicabat. Corculum interea, nam tale revera fuit, supra ipsam dorsum spinam detruferat; pulmonumque lobos ejusdem lateris eousque coarctaverat, ut omnino sedibus pulsos, aut nullos fuisse, pene crediderimus.

Pylorus ex hoc utriculo juxta tertiam costam emergens, et sinuosâ flexura deorsum vergens, in duodenum abiit; quod, qua parte septi jugum in descensu transivit, et ipsum coangustari debuerat, quotiescunque ventriculus aut cibus aut flatibus intumuit. Quumque ita a naturali cursu devium aberrare necesse habuit, nil mirum si ductus communis biliaris, a recto intestini itinere tensus et fere connivens, suo semper munere fungi non poterat: hinc cutis, hinc urina quandoque

doque discolorēs; et hinc sine bile dejectiones.

Tubi intestinalis anfractus presse sequentes iterum in thoracis antra ducimur: nam supra ipsum diaphragma, et pone ventriculum, portio ilei aliquot palmas longa convoluta delituit: exitum finemve quærentibus in conspectum venit appendix vermiformis, et cæcum fecibus distentum, amplum; incumbente ventriculi mole compressum, ejusque nifu extremo antri angulo adaptatum: denique annexa coli pars circiter dimidia, crebris et profundis sinibus notabilis.

Qua parte colon tensum septi limbum superabat, id tantum non abscissum invenimus; nam ventriculus sæpius repletus, cedentis intestini latera contra membranæ renitentis marginem obstitens; ea ita attriverat, seu premendo angustaverat, ut ne quidem fecibus crassioribus trahendis aptum videbatur.

His demum attente perspectis, cætera ejusdem cavi contenta exquirere satagemus; et sub firma tectos membrana, quam mediastini parietem esse sinistrum judicavimus, pulmonum lobulos detegimus, arctissime posticæ thoracis regioni undique non adhærentes modo, at firmiter agnascens dudum officio suo defuisse videbantur: Plexus præterea fibrarum validus, ex membrana cellulosa quasi contextus, totam lobulorum compagem, pleuræque superficiem sic intercedebat, ut nulla ratione seipfos expandere valerent pulmones, si a tergo liberum movendi spatium permisissent intestina et ventriculi portio.

Alterius deinde lateris cavum excutimus, et pertusa membrana firma, quam pro altera mediastini plica habuimus, pulmo dexter fanus fatis et integer sese prodidit; quique proculdubio utriusque munere diu perfunctus est.

Paulo infra pulmonis marginem inferiorem, supra diaphragma, sacculus erat quasi ex membrana cellulari conflatus, qui, forcice apertus, binas circiter uncias liquoris flavo-viridantis, albuminis instar gelatinosi, loculamentis membranaceis contenti, profudit. Num ex hoc fonte profluxerat ista sanies, quæ indomabilem tuberculorum vim, faciem, collum, cæterasque partes sedantem, enutriverat? Ita quidem verosimile videtur; nam liquidi in utrisque color idem erat.

Pericardium proxime referatur, quod et ipsum liquore simili scatebat: effluxit quippe ex apertura ad duas fere uncias humor descripto, modo paullulum tenuior magisque flavescens, simillimus.

Cor erat exiguum, tactui durum, et in bina æqualia quasi loculamenta discretum: hic enim auricula dextra sanguine distenta, vix cordi magnitudine cederet; ibi ventriculi cruore atropauco crassissimo facti: inter utrosque vinculi partes agunt vasa coronaria, cordis basin arcte adstringentia.

Ex secta auricula cruor aterrimus, spissus, corio tenaci opertus exprimitur; ipsius sacculi latera ex venulis varicosis livescentibus tantum non constare videbantur.



Sæpius inter fecandum tam casu, quam dedita opera, majores venas pertudimus at nunquam alias, tam parum sanguinis effluxisse memini, isque erat crassus et niger, tanquam sero omni et diluente lymphæ orbatus.

Lustratis jam et sua sede visceribus, ventriculæ eximere partemque intestinorum libitum est, ut quantum ad formam situmque mutata essent, exploratum haberem: dum vero manus operæ admoveo, leniterque ventriculi fundum prehendō, ecce omnino putris, et ne tactus quidem levis patiens, pars ima intra digitos collabascit.

Nulla aderant inflammationis gangrænosæ indicia: non rubor, non striæ, nulla stigmata livescencia: omnis albore pallet, et sic tam nulla vi in tabem destuebat, ut potius acribus erosam, vel humidis laxatam fuisse compagem, quam gangræna corruptam judicarem.

Nec intuenti ventriculi situm hoc absconum videbitur. Heic enim ex imo visceris hujus fundo, ad summum pylori jugum, ascensus omnino acclivis: in nostra etiam sublata erat vis septi renitens, cujus ope in altum attolli unice valuerant ventriculi contenta: plus itaque laboris musculis ventris solis peragendum erat, quod quam in aliis peragitur, sociato diaphragmatis nixu. Ingesta proculdubio suam sequi indolem, favente mora et quiete debuerant; quibus conditionibus si addamus perpetuum humoris gastrici stillicidium in unum quasi ventri-

culi punctum, tam vomitus funesti ortum, quam putredinis causam perspectam habere possumus.

Hinc quoque manifestum erit, quare noctu quam interdiu, procumbens quam erecta, laxè quam arctè vestita, pejus se habuit: et quantas anxietates, ægritudines, et molestias, pati oportuit, quoties situs horizontalis, habitusque parum strictus, ascensum facilem cibis in pectora præbuere? Cor ipsum mole prægravari necesse erat; luctamque dubiam contra hostes irruentes solum sustinere.

Tradita hucusque rerum historia symptomatum explicationem promptam, ni fallor, reddidit, ideoque mihi supervacaneam: superest tantum modo, ut aliqua, quæ in mentem mihi sæpius morbum immedicabilem pensitanti venerunt, at paucissimis, referam.

1. Patet enim imprimis, animal posse vivere, vegere, lætari, et quodammodo valere, cui finiditur vel disrumpitur diaphragma.

2. Ideoque minus huic metuendum, in pectore pertundendo, quoties empyema aut hydrops remedium anceps experiri suadeant.

3. Ita affectum esse diaphragma, (1.) si ampla hiansque plaga fuerit, forte dignoscendum, ex ipsa thoracis figura productiore, minus obliquo costarum situ, et læsa simul respiratione.

4. In morbis infantum, quorum natura videatur reconditior, ex accurata partium externarum contemplatione, indagine, fortassis aliquid lucis elici queat: ideoque nequaquam prætermittendum.

5. Quotiescunque

5. Quotiescunque tubercula, pustulæ exanthemata, singularem aliquam corporis regionem occupant, ibi subtus, in vicinia, malum fomitem latere suspicandum.

Ita tandem casum, nulla arte sanabilem, et forte nimia diligentia exposui; id vero ægre te laturum haud quidem existimo: nollent enim nescire cordatiores in arte viri, quibus ex causis præmatura mors superveniat, quotiescunque cadavera lustrandi copia conceditur: ipsos etenim medentes non solum rerum gnaros peritosque reddit, verum etiam tam orbatis dolorem minuit, quam dedecus aufert arti, palam perspectum habere, nullis remediis, nulla ope, ne quidem tua, supremam fortem potuisse protrahi.

Vale, vir candide, diuque felix orbi interfis, bonarum artium patronus, medicæque juventutis pater atque princeps.

The first part of the report is devoted to a general  
 description of the country and its resources. It  
 is followed by a detailed account of the  
 various industries and occupations of the  
 population. The report then proceeds to  
 a description of the climate and the  
 diseases which are prevalent in the  
 country. The last part of the report  
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 public works.

## T R A N S L A T I O N

O F

## A L E T T E R

O N A

*Ruptured Diaphragm, and a Change in the  
Situation of some Viscera, observed in the  
Body of a Female Child Ten Months old;*

ADDRESSED TO

R I C H A R D M E A D.

WHEN I lately made mention, in thy presence, of a case which appeared to me altogether singular, thou advisedst that I should commit the whole history of it to paper: I have therefore attempted to comply with thy advice; and this I have done the more willingly, as being certain, that what had not displeas'd thee in private, would be agreeable to many if made public. Thus much will certainly be attributed, and that with justice, to the authority of a man, whose dearest object and strongest wishes are, to deserve well of every useful art, of his fellow citizens, and of human-kind in general.

But that the case may appear more clear, I intend to commence my history from the first origin of it, giving a relation of every thing I was witness of, with all the fidelity and simplicity in my power.

A woman, about twenty-one years of age, of a genteel family, respectable both for her keen lively wit and agreeable person, of a tall slender habit, a temperament verging towards the sanguineous, generally happy in moderate health, miscarried, about the fifth month of pregnancy of her first child,

Unfortunately for her, this happened while she was on a visit to a relation, in a village far distant from her friends and home. The case being urgent, the nearest midwife was called in; who being in great measure ignorant of the art, and only used to the robust women of the country, treated the uterus of this delicate person so rudely, that she excited from the lacerated vessels an hæmorrhagy, or flooding, so violent that no art could stop it: at length a most alarming *syncope*, or fainting, supervened, which, for the present, both took off the motion of the fluids and the action and force of the solids. After some time, however, she revived, and at length recovered, but in such a manner, that the paleness of her face and limbs evidenced great loss of the vital spirits.

She was scarcely recovered from these great misfortunes, when she again became pregnant; but it would be melancholy to relate her miserable  
able

able condition through the whole course of her pregnancy; all the most dangerous complaints which usually afflict pregnant women, afflicted our patient in the worst degree.

At the proper time, however, she was brought to bed of a girl; whose history, with respect to diseases, death, and opening the body (the circumstances of the mother having terminated happily) I now undertake to relate.

The body of the new-born infant seemed free from fault: it was, however, little and weakly; its skin too flaccid, and somewhat too much wrinkled, which evidenced its having received too little nourishment; but no one will wonder at this, who considers the history given of the mother.

The respiration of the infant was too frequent from its birth, and a few days after came on a stuffing and heaviness of the head, as if from having caught cold, with a considerable excretion of a watery mucus from the eyes, nose, and mouth, which, as often as it was obliged to suck, almost threatened suffocation. On this account it would cry, and go into more violent passions than is usual at so tender an age; so that the attendants would often fear, lest in a short gust of passion it should expire.

By proper medicines, especially gentle laxatives, it seemed in some measure freed from the cold and stuffing of the head: strength also gradually increased as it grew bigger, and the parents were induced to hope, that the health of  
their

their little delicate daughter would now become more strong and firm.

The infant was seized with a sudden vomiting, more frequently than is common to most other children; the matters thrown up, neither resembled crude nor digested food, but a kind of purulent pap, sometimes acid, sometimes of a foetid smell; the stools also were too frequent, and exactly of the same kind of matter: the respiration in the mean time frequent, laborious, and during the night extremely difficult. These symptoms were the more discouraging, as they did not yield to remedies which usually give relief in similar complaints.

About the seventh month some exanthemata or eruptions appeared, first on the face, then on the neck, shoulders, breast, and to the ends of the fingers. They were round, broad, like flea-bites, red, hardish, and extremely troublesome, with itching; by degrees they were raised into little vesicles, and at length filled with a thin pellucid serum: being dried into chaffy scales, they fell off, leaving marks of a livid red colour, which remained a long time.

These eruptions had appeared after a fever of a few days continuance; but as they observed no regular type either in their coming on or going off, as the itching was extremely troublesome, and a new crop always succeeded the old one, I concluded the disease would be of long duration, and had taken a deeper root than what could be accounted for from an irregular fever; and



and as the force and itching of the exanthemata coming out, daily increased, I supposed the disease derived its increase from some impure matter lodged within, vitiating the humours. I therefore applied to the mildest purgatives, such as would obtund the acid or acrid matter, and those which seemed proper to resolve the viscid. And, lest the manner of diet, though the most proper for the nurse, should not so well agree with the tender infant, I ordered both of them to eat nothing but broth, the most tender animal food, and such as was of most easy digestion. By this means the number of tubercles, the itching, and other complaints, were in a short time diminished, and the health of the infant, hitherto doubtful, was in some measure established.

It had reached the beginning of the tenth month of its age, when the nurse, by order of the parents, began to wean it. It bore this without much inconvenience; on the sixth day, being costive, it took its usual solutive draught, from which it had two stools, and was well. Towards evening it was seized with a most violent vomiting, arising, so far as could be perceived, from no cause; but which harrassed the little sufferer, almost without intermission, for the space of twenty-four hours, and then closed the scene of a short life.

It is not necessary to mention singly all the remedies made use of. This new and obstinate disease was opposed, both by most known remedies and some new ones, internal and external.

Through

Through the whole course of life (for this was the terminus of the disease) the tincture of rhubarb, made with weak cinnamon-water, and given in small doses often repeated; and a linctus made of oil of almonds, pectoral syrup, and a little soap, were more useful than any other remedies: In the last fatal struggles, the most mild, grateful aromatics; anodynes, and even soporific medicines, which usually moderate and obtund the acid or acrid matter, were exhibited in order to take off the vomiting, but all in vain: No spontaneous motion to stool now occurred, nor did the bowels yield to any stimulating remedies:

I had a wish to search out the causes and seat of this violent disease; and having obtained permission, I attempted it the next day: But before I enter upon the dissection, it will not be amiss, perhaps, to bring into one view the principal symptoms under which the infant laboured from first to last.

1. The pulse was always disturbed, small, tremulous; and very frequent.

2. Respiration was always quicker than natural, and more difficult in the night than the day.

3. It must be observed also, that even in the day-time, the respiration became more difficult; in proportion as the cloaths were put on more loosely: and the more tightly they bound the breast and belly, the more natural was the respiration.

4. The action of breathing also was more difficult

ficult when lying ; hence it happened, that, after the first sleep, it commonly spent the rest of the night sitting in the bosom of the nurse.

5. When the child seemed in its best state of health, it was afflicted in the night, more or less, with cough, restlessness, and feverish heat ; and these were always more troublesome in the night than the day.

6. It was often distressed with frequent vomiting, without evident cause : the matters thrown up were crude and various ; sometimes acid, sometimes putrescent, fattish, or foetid.

7. The discharges by stool were like those thrown up by vomiting.

8. It was endowed with so strong and unhappy a sense of smelling, that the smell of animal food, any-way prepared, often excited severe vomitings.

9. Whenever it was costive, there was a greater tendency to vomit ; but a diarrhoea, sometimes violent and continuing long, did more harm than vomiting.

10. The urine was affected with great acrimony, as appeared by the smell, which was commonly acrid, like the spirit of urine : it tinged cloths of a yellow colour.

11. The skin was sometimes covered with a similar taint.

12. The humour commonly excreted behind the ears of infants, was also in this extremely foetid.

13. Its disposition was mild, placid, and patient

tient under sufferings: but if at any time its passion was kindled, it rose to a wonderful pitch; the passion, however, was extinguished with equal celerity, otherwise it would immediately have perished from suffocation.

Every one skilled in medicine, I think, will suppose, from the history now given, that the disease was a new one; that the powers of the stomach especially were debilitated, the excretions disturbed, the blood vitiated, and that the lungs did not properly perform their office; perhaps also they may suppose the liver had not been free from fault. But who would ever have conjectured that the *septum transversum* was divided asunder, and that a large portion of the stomach, and great part of the intestines, had rushed through this opening into the cavity of the breast? Yet this, and even more, the dissection of the body discovered to us; which the next morning I performed, accompanied by H. Delanoy Pigot, a skilful surgeon of Wandsworth.

We found the body shrivelled, and wonderfully shrunk, in the space of twenty-four hours. As to the figure and magnitude of the parts, every thing was right, except that the breast seemed longer and narrower than natural. The ribs, indeed, were not so obliquely placed as usual, but lay too flat towards the axis of the body.

The left iliac region was of a livid colour, as if it had been affected with gangrene: many vesicles

ficles were visible about the shoulders and arms, some of which contained a reddish, some a greenish, and others a yellowish liquor.

Having cut through the skin and thin muscles lying underneath, we found the *tunica cellularis* quite free from fat.

The belly being opened, we found the lower margin of the omentum wholly free from fat, and scarcely reaching to the navel. A portion also of the small intestines, and the lowest part of the stomach, were visible; next we observed the liver, large and pallid; under the side of which lay concealed the *vesica fellea*, large and turgid, the bottom lying more directly upward, and the neck more directly downward, than what is usual in healthy persons. This being opened with the scissars, it was found to contain nearly an ounce and an half of a thick blackish bile; but though the wound was open, it was too thick and tough to run out without pressure. The neighbouring parts were all tinged of the deepest yellow; the ileon seemed here and there inflamed; the colon was removed from its proper place; the spleen, kidneys, and other parts, were found.

Having again cut through the skin and muscles, we cautiously divided the *sternum* up to the *jugulum*. But, the edges of the wound being drawn aside, behold! a sight, never, that I know of, before seen. A great portion of the stomach had thrust itself into the left cavity of the breast, wholly covering the lobes of the lungs,

lungs, the pericardium itself, and in it the heart.

Having drawn aside the stomach, to see what might be concealed under it, we found a part of the ileon, about three times the breadth of the hand, the cæcum and its appendage, together with no small portion of the colon, all concealed in one and the same cavity.

Struck with the novelty of the thing, I again examined the whole; doubtful lest a wound made in the diaphragm, in dissecting the body, might have opened a passage to these viscera. But an inspection, as accurate as possible, removed all doubt, and convinced me that the diaphragm had been split, divided, or ruptured for some time; for the edges of the rupture were perfectly hardened, nor were there any marks of a recent wound any where to be seen.

As therefore it appeared that no injury had been done to the diaphragm by us, we carefully replaced all the parts in the situation they had been in before, that we might examine them one by one with proper attention.

The *septum transversum* being torn off from the *os sternum* and cartilages on the anterior part, and divided and drawn back to its center, had formed a tense lunar arch; the corners or horns of which, on the right side, reached nearer the cartilaginous terminations of the ribs; on the left they were more distant; and thus there was an unequal sinus formed, more open on the left than on the right side.

The

The viscera having been carried upward through this ample sinus, had gained so safe a seat, that I judged it impossible that they could ever have fallen back into their *pristine* situation, either by their own weight, or any shaking or change in the posture of the body, in whatever manner this had been made. I say their *pristine* situation, because we are not hastily to suppose that they were in this situation before the birth of the child. Many reasons induce me to believe that the mischief happened in the birth.

The bag of the stomach, which immediately receives the ingesta from the œsophagus, was much wider than usual, and also paler and thinner, but remained in its proper situation. The other part, being pushed upwards, and then obliquely bent backward, was elevated above the arch of the septum: in this passage, however, we observed that the margin of the septum had made that part of the stomach narrower, *or formed a kind of stricture upon it.*

Having passed these straits, it was again enlarged into a bag sufficiently capacious, which lay upon the arcuated septum, as on a bench, and occupied the whole space of the left breast. It had thrust the little heart, for such it really was, upon the spine of the back, and had so straitened the lobes of the lungs on that side, that one would almost have thought they had been driven from their situation, or that there had been none at all.

The pylorus emerging from this bag near the

third rib, and bending downward with a sinuous flexure, ended in the duodenum; both of which must have been straitened or constricted, in the part where it passed over the ridge of the septum, as often as the stomach had been swelled with food or wind. As therefore the duodenum had been under a necessity of deviating from the natural course, it is no wonder if the common biliary duct, bent from the strait line of the intestine, and almost closed, had not always been able to perform its office: on which account the skin and urine were sometimes discoloured, and discharges by stool, without bile.

We closely followed the winding tract of the intestinal tube, and were again led into the cavity of the thorax: for a convoluted portion of the ileon, some hands breadth in length, lay concealed above the diaphragm, and behind the stomach. Searching for its exit or end, we found the vermiform appendage, and the cæcum distended with fæces, large, and compressed with the incumbent load of the stomach, by the motion of which it was adapted to the extreme angle of the cavity. About half the colon, annexed to it, was remarkable for frequent deep sinuosities.

Where the colon had stretched beyond the tense border of the septum, was the only part of it we found not cut and worn; for the stomach, often full, pressing the sides of the yielding intestine against the edge of the resisting membrane, had so worn or constricted it by pressure,  
that



that it seemed by no means suited to admit the thick fæces to pass through it.

These being at length attentively viewed, we set ourselves to examine the other contents of the same cavity; and under a firm membrane, which we took to be the left side of the mediastinum, we found the lobules of the lungs concealed, and every where not only closely adhering to the posterior region of the thorax, but firmly growing to it, so that they seemed long to have failed in performing their function. A strong plexus of fibres also, formed as it were of the cellular membrane, connected the whole structure of the lobules and superficies of the pleura, so together, that the lungs could by no means have expanded themselves, if the intestines and part of the stomach had left a free space behind.

We next examined the cavity on the other side; and, having cut the firm membrane, which we took to be the other folding of the mediastinum, the right lung appeared sufficiently found and compleat; and which, no doubt, had long performed the office of both.

A little below the inferior edge of this lung, above the diaphragm, was a bag, formed as it were of cellular membrane, which being opened with the scissars, was found to contain about two ounces of a yellowish-green liquor, gelatinous like the white of an egg, and contained in membranous follicles.---Had the sanies, which gave such irresistible force to the tubercles affecting

the face, neck, and other parts, arisen from this source? It seems very probable, for the liquids in both were of the same colour.

The pericardium was opened next, and was found to abound with a similar liquor. There flowed out from the aperture about two ounces of an humour exactly like that described above, only it was a little thinner and more yellow.

The heart was small, hard to the touch, and divided as it were into two unequal partitions; for the right auricle, distended with blood, almost equalled the bulk of the heart; the ventricles were stuffed with a small quantity of black thick blood: between both ventricles the coronary vessels acted as vinculi, or ties, binding tightly the basis of the heart.

The auricle being cut open, a most black spissid blood, covered with a tenacious membrane, was squeezed out from it. The sides of the bag itself seemed almost wholly formed of small livid varicose veins.

We often, in dissecting, both by accident and with design, wounded the larger veins; but I never remember that any thing issued out but a little blood, which was thick and black, as if deprived of all its serum and diluent lymph.

Having now examined the viscera, and their situation, I wished to take out the stomach and intestines, that I might see how much their form and situation had been changed. But on attempting this, and gently taking hold of the bottom of the stomach, behold it was altogether  
putrid,

putrid, not bearing the slightest touch, but the lower part of it fell to pieces between my fingers!

There were no signs of a gangrenous inflammation; no redness, striæ, or livid spots appeared: every part was of a pale white, so that I imagined the stomach had not fallen into this waste from any violence or force, but that its structure had rather been eroded by some acrid matter, or relaxed by moisture, than corrupted by gangrene.

Nor will this seem improbable to any one viewing the situation of the stomach; for the ascent from the bottom of this viscus to the highest point of the pylorus, was altogether steep; in this subject, also, the re-action of the diaphragm was lost, by the help of which only the contents of the stomach can be raised upwards. More labour therefore rested on the muscles of the belly, than in other cases where the action of the diaphragm is joined with them. The ingesta must, without doubt, from their delay and rest in the stomach, have retained their own nature; to which, if we add the constant dropping of the gastric juice as it were on one part of the stomach, both the origin of the fatal vomiting, and the cause of the putridity, will be evident.

Hence also it will appear why the infant was worse in the night than the day, when lying than in an erect posture, and when loosely clad than when tightly bound; and how great anxiety, sickness,

and inconvenience, it must have suffered, as often as its horizontal situation, and loose dress, gave an easy ascent to the food into the breast. The heart itself must have been greatly incommoded by the bulk of the unnatural contents of the breast, and have alone sustained a doubtful contest against the rushing foes.

The history of what appeared on dissection, thus far delivered, gives, if I mistake not, an easy explication of the symptoms, and therefore unnecessary for me to attempt; it only remains, that I relate briefly a few things which occurred to me, when often contemplating this incurable disease.

1. First then it appears, that an animal may live, be strong, chearful, and in some measure well, in which the diaphragm is split or ruptured.

2. Therefore less is to be feared from this accident, in opening the breast, as often as an empyema, or dropsy, persuade us to try this doubtful remedy.

3. If the wound be wide and open, we may, perhaps, know that the diaphragm is thus affected, (1.) from the figure of the breast being too long; from the less oblique situation, than usual, of the ribs; and the respiration being at the same time injured, or rendered difficult.

4. In diseases of children, the nature of which seems very abstruse, some light may perhaps be gained from an accurate view and examination of the external parts; and therefore it should not be omitted.

5. As

5. As often as tubercles, pustules, exanthemata, affect some particular part of the body, we may suspect that the fomes of the disease lies not far beneath.

Thus, at length, I have explained a case curable by no art; but, perhaps, I have been too minute: this, however, I think will not displease thee, as the sincere in the art are unwilling to be ignorant from what causes premature death may supervene, as often, at least, as an opportunity of examining the body is granted them: for the dissection of such bodies not only renders the physicians more skilful, but it also lessens the grief of parents or friends for the deceased, and takes off the odium from our art, when it is publicly known, that by no remedies, by no help, no not even by thine, the final period of life could have been protracted.

*Vale, vir candide!* May'st thou long be happy in life, the patron of useful arts, the father and encourager of medical youth!

As often as I have examined a case, I have observed that the disease is not in the stomach, but in the lungs, and that the patient is affected with a particular part of the body, we may suppose that the disease is not in the stomach.

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**I**T was a custom very early introduced into the Royal Society, to insert Remarks on important Publications, that had any reference to the objects of its institution. It was not unusual to refer such works to some junior member, who made an epitome of them, or offered such critical remarks as he deemed proper to lay before this learned body. Of this kind is the following Essay. The succeeding volume was put into the hands of the learned Dr. William Watson, of Lincoln's-inn-fields: his observations were printed in the Philosophical Transactions, vol. xlvi. p. 141. ann. 1753; and this is followed by a letter from Philip Miller, F. R. S. to Dr. Watson, concerning a mistake of Professor Gmelin, respecting the Spondylium vulgare hirsutum of Caspar Baubin, vol. xlvi. p. 153.

For several years past, the Society has not been in the practice of thus epitomizing the works of the learned; it was probably suggested, that it gave the Transactions of the Society too much the form of a Bibliothéque: it may, however, be doubted, whether this reformation has added to the merit and reputation of this collection of immense literature, or been the means of admitting more original and important communications.

Editor.

It was a custom very early introduced into the  
 Royal Society, to give a Review of the important  
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 vol. 1. p. 141. and is also to be seen in the  
 by a letter from Philip Wallis, Esq. to the  
 for containing a list of the works of the  
 ing the equilibrium of the fluids of the  
 Wallis, vol. xi. p. 141.

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 the names of authors are original and



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A N  
A C C O U N T  
O F S O M E  
OBSERVATIONS AND EXPERIMENTS  
MADE IN SIBIRIA;

Extracted from the Preface to the “ *Flora  
“ Sibirica, sive Historia Plantarum Sibiriae,  
“ cum tabulis æri incis. Auct. D. Gmelin.  
“ Chem. et Hist. Nat. Prof. Petropoli  
“ 1747. 4to, vol. i.\** ”

Read before the ROYAL SOCIETY, February 11, 1748.

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**B**Y direction of the late Empress of Russia, several Members of the Royal Academy of Sciences at Petersburg undertook a journey into Sibiria, in order to enquire into the natural history of that country, and to make such experiments and observations as might tend to give a

\* Philosophical Transactions, N<sup>o</sup> 486, p. 248.

just idea of that almost unknown region, and to the improvement of physics in general.

Dr. John George Gmelin, Professor of Chemistry and Natural History at Petersburg, was sent at the head of this deputation, who, besides several of his colleagues, and some students, had a painter or two, a miner, huntsman, and proper attendants in his retinue.

He set out upon this expedition in August 1733, and returned to Petersburg in February 1742, after having spent nine whole years in visiting almost every part of Siberia.

The fruits of this undertaking are designed to be communicated to the public; and one volume of the History of Plants has already appeared, under the title of "*Flora Sibirica, sive Historia Plantarum Sibiriae, Tom. I. continens Tabulas Æri incisas L. Auctore D. Joh. Geo. Gmelin, Chem. et Hist. Natur. Prof. Petropoli Typis Academiæ Regiæ Scientiarum 1747.*" This is intended to be followed by several others, containing not only a description of the plants, their *locus natalis*, &c. but their uses among the inhabitants, so far as the Professor could get information concerning them.

In a large preface to this first volume, the ingenious and indefatigable author has given us a concise account of Siberia in general, its rivers, lakes, mountains, mines, the nature of the soil, fertility, &c. with several judicious experiments and remarks on the altitude of the earth above the level of the sea; but especially on the qua-

lities of the air in that climate; an abstract whereof, at first drawn up for private entertainment, was thought not unworthy of more public notice, and is therefore addressed to the Royal Society.

The country, whose natural history Dr. Gmelin has collected, is of vast extent. It is bounded by a chain of mountains called the Werchoturian and Vralian, on the west; by the sea of Kamtschatka, on the east; and comprehends all those countries that lie betwixt the *Mare Glaciale*, and the borders of the Kalmucks and Mongales, to the very confines of China.

The rivers which water this tract are numerous; some of them large, and even receiving streams in their course, which in other countries would be looked upon as capitals themselves. The space they measure is no less considerable. The Jaik is the first river of note on the western side. It rises under the latitude of 54, of longitude 78, and runs into the Caspian in 47 of latitude, and 74 of longitude. The Irtisch rises in the country of the Kalmucks, latitude  $46\frac{1}{2}$ , longitude 103; and empties itself into the Oby, latitude 61, longitude 86. The Oby rises under 52 latitude,  $103\frac{1}{2}$  longitude, and loses itself in the *Mare Glaciale*, latitude 67, longitude 86, after running a course of near eight hundred leagues, and receiving a great number of rivers of considerable note. The Jenisea is not much less than the Oby. The Selenga takes its rise under latitude 48, longitude 114, runs into the lake

lake Baical in  $51^{\circ} 20''$  latitude: with many others equally considerable, which it would be tedious to mention.

The water of these rivers is for the most part fresh, clear, and salubrious. In some it is a little brackish, by the mixture of currents from salt lakes and springs, which abound in many places. They contain fish of various kinds in great plenty, and mostly of an excellent flavour.

The lake Baical may deserve some mention to be made of it, being one of the greatest fresh-water lakes yet discovered. It extends, according to our author, from the one hundred and first degree of longitude, to the one hundred and twenty-seventh, being upwards of five hundred leagues in length, and is from twenty-five to eighty leagues in breadth. It is every where deep and navigable; the water is extremely clear, and abounds with great plenty of fine fish. It receives a great number of rivers; but the Angara alone runs out of it: which joining the Tungusca, loses its name; as this likewise does, when it runs into the Jenisea.

Salt lakes are common in many parts of Sibiria: some contain a pure white salt, well tasted, and fit for use; which, in summer, is crystallised by the heat of the sun alone, and forms a crust on the top of the lake. In some this grows so heavy, as to break and fall to the bottom. Besides this kind of pure common salt, which is fit for use, there is another sort, of a bitter taste, much resembling the *sal mirabile*,

found in several lakes in this country. Springs of salt water are sometimes observed to rise in the midst of fresh water. Our author assures us, that he has seen several such; one especially he observed rising through a stone, in the bed of the river Angara.

Before we dismiss the salt lakes, we may just mention, that on the banks of the river Kaptendei, where it runs into the Wilvius, are a great number of salt springs, which afford excellent salt; and that, about thirty leagues above this place, along the same Kaptendei, on the right hand, is a hill about thirty fathom high, and two hundred and ten long, consisting entirely of *sal gem.*

There are some lakes, which, our author informs us, in the memory of man, contained only fresh water, but now are very salt. One of this kind, about forty years ago, abounded with fresh-water fish, but is now become salt, smelling strong of sulphur, with a bitter taste, and all the fish are killed.

The inhabitants assured our author, that some fresh-water lakes have been by degrees dried up, and that others have appeared where formerly it was dry ground; and that even some of these new-formed lakes, which at first had no fish in them, are now very plentifully stocked. They have not recourse to subterranean caverns or passages for a solution of this phænomenon; but assert, that ducks, sea-mews, &c. that live upon fish, carry the eggs from one lake to another.

In the description which our author gives us of the course of rivers, situation of lakes, &c. he takes notice of the soil, its barrenness, fertility, &c. These are different, as it may be supposed, in the different parts of such an extensive climate under such latitudes. About the lake Baical is the most fruitful tract, and thence is called the granary of that part of Sibiria. They grow some little corn about the latitude of 61. They have made of late some trials still further; but the success was not known.

In his passage through Sibiria, he tells us, that he could scarce think himself in Asia, till he got over the river Jenisea; till then, he saw no animals, but such as are common in Europe, at least may be seen in the plains washed by the lower part of the Volga. The plants and stones were of the same kind, and the face of the country in general, like other parts of Northern Europe. But from the Jenisea, to the east, north, and west, the climate seemed to be wholly different, and as if enlivened with new vigour. It is mountainous; but these mountains are intermixed with rich delightful valleys and fruitful plains. The animal that affords the musk, and the *musimon* of the ancients, were now to be met with. Many of the most common European plants by degrees disappeared, and others became frequent, which are strangers in Europe. The purity, clearness, and salubrity of the waters, the exquisite taste of the fish and fowl, but more especially the different genius and way of  
life

life of the inhabitants, plainly proved they were got into another climate. This remark our author submits to the consideration of geographers.

Amongst the curiosities of Sibiria the Professor mentions a place remarkable for its excessive coldness in the midst of summer. It is in the province of Jacutski, about the middle way to Ochoitz along the river Jucanan; it is called by the Russians Springing Ice, by the natives the Icy Lake. Three other such places occur within the circuit of eighty leagues.

The provinces beyond the lake Baical are mountainous, with high and wide-extended plains lying betwixt them, which in many places are only covered with barren sand; so that in some places one may travel through such deserts one, two, or three days together, without finding wood enough to make a fire, or any other water than that of salt springs, which are very frequent; and being dried up by the summer heats leave a saline crust, very much resembling *Natron*, being of an alkaline nature, with a sulphureous smell.

The country that borders on the rivers Urun-can and Gasimur is extremely rich and fruitful. The face of the country is delightful, and its produce to the husbandman almost exceeding his hopes: but what renders it still more surprising is, that a country, whose soil yields to few in fertility, and the beauty of its bloom, should

yet cover immense riches in its bosom. Here are mines of gold and silver, which have long been worked to advantage: the veins are rich, and lie shallow; yet communicate no poisonous effluvia to the vegetables that cover them: nor do those distinguishing marks of sterility appear here, which in most other mining countries are so observable.

The highest part of Sibiria is towards the springs of the rivers Argun, Schilca, &c. about the 49th degree of latitude, 130th longitude. This part is destitute of marble and lime-stone, which are almost every where to be met with in the lower tracts both of Sibiria and Russia: no petrifications are to be found here, either of the testaceous or crustaceous animals; and the veins of ore are always found near the surface, never entering deep into the earth. Besides the mines of gold and silver above-mentioned, copper and iron are found in several places; likewise the *Glacies Mariæ*, or Muscovy Glass, is dug near the river Mama. Loadstones are also got in Sibiria; and in several of the rivers, beautiful transparent pebbles and crystals occur.

I shall only add, that there are some natural warm baths in several parts of Sibiria, and some of them of a most agreeable temperature; and proceed to the account of our author's observations and experiments on the height of the earth, &c.

Pauda is allowed to be the highest of all that  
ridge



ridge of mountains called Werkoturian. Our author endeavoured to take the height of it by means of the barometer.

On the 11th of December 1742, at our author's lodgings at the foot of Pauda, the mercury in the barometer, in a cold place, but within doors, stood at  $26\frac{83}{100}$  Paris measure. He then carried it up the mountain as high as he could go, which was about one-third of the whole height, where he hung up the barometer on a tree, from nine to eleven in the forenoon, making a good fire pretty near it, lest the intense cold, which sunk the quicksilver in De Lisle's thermometer to 201, should affect the barometer, and lead him to ascribe that to gravity, which was only owing to the contraction of cold.

Under these circumstances the quicksilver sunk to  $25\frac{32}{100}$ .

Hence, according to M. Cassini's calculation, our author's first station will be 941 feet higher than the level of the sea: the second on Pauda 1,505 feet, and the whole height of this mountain 4,515, or 752 Paris toises; which added to 941 feet, the height of his lodgings at the foot of Pauda, makes 5,456 feet, or 909 toises, the height of Pauda's top above the sea; supposing the level of the sea to be 28 inches, as the Paris academicians have fixed it: though this differs from observations made on the barometer at the sea-coast of Kamtschatka at Bolcheretz; where, from experiments made above two years, the

mean height of the mercury was 27 inches,  $6\frac{1}{2}$  lines. And at Ochotz, during a year's observations, the mean height was found to be 27 inches and about  $8\frac{1}{2}$  lines.

Hence it would appear, that the sea of Kamtschatka is higher, with respect to the earth's center, than the Ocean and Mediterranean; and at Bolcheretz higher than at Ochotki.

The following list of barometrical observations, made in various parts of Sibiria, will shew the different heights of the different tracts in it.

	Feet.	Toifes.	Inches.
The mean height of the barometer, from a year and 10 months observations at Ircuts, was	—	—	26 $\frac{38}{100}$
Its height above the sea will then be	1355 or	226	—
At Selengia, 1 month's observations	—	—	25 $\frac{95}{100}$
Its height above the sea	1779 or	296	—
At Kiachta, a town on the confines of China, 12 days observations in April and May, mean height	—	—	25 $\frac{35}{100}$
Its height	2400 or	400*	—
At Nertschia, from 20 days observations in June	—	—	25 $\frac{92}{100}$
The height above the sea	1738 or	298	—
At the silver mines at Argun, 9 days in July	—	—	25 $\frac{62}{100}$
The height above the sea	2121 or	353 $\frac{1}{2}$	—

\* In the copy before me appears to be a great mistake, either of the printer, or in the manuscript; it being put down in words at length, *bis mille quadringentarum Orgyarum cum dimidia*; which is impossible; and the number of feet is not exact, according to other calculations.

Our author adds several judicious reflections upon the time and manner of making these observations, in order to determine any thing with certainty, which he has endeavoured to keep strictly to in these experiments; and concludes, that the plains in some parts beyond the lake Baical, are almost as high as the tops of high mountains in some other countries; Mount Maf-fane, according to the French geometricians, being but about 408 toises high, which differs but little from the plain country at Kiachta; which yet has considerable mountains rising in its neighbourhood.

From whence our author concludes, that the elevation of the earth, in this tract, above the level of the sea, is very great, compared with the west part of Sibiria and Europe\*.

The

\* M. De la Condamine, in his voyage through the inland part of South America, makes Quito to be between 14 and 1500 toises above the level of the sea.

Suppose	—————	1450
He tells us, that Pichincha is 750 higher	—————	750

This makes in the whole, above the level of the sea	}	2200 toisf.
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P. Martel, engineer, in his account of the Glacieres in Savoy, printed at London 1742, tells us, that the barometer at Geneva, by the side of the Rhone, stood at  $27\frac{2}{12}$  I. which is 656 feet above the level of the sea, according to Scheuchzer; and that the highest point of Mont Blanc, measured partly by the barometer, and where inaccessible from the snow that covers it, by trigonometrical operations, is 12,459 feet,

The air of Sibiria, with respect to its gravity, is, as in other countries, the nearer the sea the heavier; and the more remote, the lighter: so that at Kiachta, scarce one person in our author's retinue escaped without some indisposition. They were seized after their arrival, some with acute fevers, others complained of extreme lassitude and dejection. It was in the spring season, the weather moderate, their manner of living regular, nor had they been much fatigued with their journey; in short, they could attribute it to no other cause than the lightness of the air.

In these provinces, viz. beyond the lake Baical, our author tells us, that intermittents are seldom heard of, and ophthalmies are endemic; but that, in the fenny tracts which lie near the Oby and Janisea, intermitting fevers are very frequent.

The coldness of the air of Sibiria is of all others of the most remarkable quality. In some places it snows frequently in September, and not seldom in May. In Jacutsk, if the corn is not ready to cut in August, which often is the case, the snow sometimes prevents it, and buries the harvest all together. At Jacutsk, the Professor

feet, or somewhat more than 2,076 toises above the level of the Rhone; which, added to the height of this above the sea, makes 13,115 French feet, or about two English miles and two-thirds.

ordered

ordered a hole to be dug in the earth, in a high open place, on the 18th of June; the mold was 11 inches deep; below that was sand about  $2\frac{1}{2}$  feet; it then began to feel hard, and in half a foot more it was froze as hard as possible. In a lower place, at no great distance from this, he ordered another hole to be dug: the soil was 10 inches; soft sand 2 feet 4 inches; below this, all was congealed; so that the earth is scarcely thawed even in summer above four feet deep.

Our author inclines to the received opinion, that the eastern climates under the same latitude are colder than the western; and thinks this is confirmed by experiments made in different parts of Siberia.

The mercury in De Lisle's thermometer often sunk in winter in very southern parts of this country, as near Selinga, to near 226, which is equal to  $55\frac{1}{2}$  below 0. in Fahrenheit's thermometer. But the cold is often much more intense than this, as appears by the following experiments, made at Kirenginski.

Feb. 10, 1738. At eight in the morning the mercury stood at 240 degrees in De Lisle; which is 72 below 0. in Fahrenheit's.

On the 20th it sunk one degree.

At the same place in 1736,

Dec. 11. At three in the afternoon, 254 in De Lisle.

Almost 90 below 0. in Fahrenheit.

Dec. 20. Four o'clock, p. m. 263 in De Lisle.

$99\frac{4}{8}$  below 0. in Fahrenheit.

D. F.

Nov. 27. Twelve at noon,  $270 = 107 \frac{73}{100}$  below 0.Jan. 9. — — —  $275 = 113 \frac{65}{100}$ .

1735, Jan. 5. Five in the morn. 260.

Six ————  $280 = 120$ .Eight ———— 250, and rose by degrees  
till eleven at night, when it stood at 252.

Such an excess of cold could scarcely have been supposed to exist, had not experiments, made with the greatest exactness, demonstrated the reality of it.

During this extreme frost at Jenifea, the magpies and sparrows dropped down as they flew, and to all appearance dead; though they mostly recovered when brought into a warm room. This was quite new to the inhabitants of that country; though it frequently happens in Germany in much less intense cold, when the weather sets in at once very severe.

The air, says our author, was at that time extremely unpleasant; it seemed as if itself was froze, being dark and hazy; and it was scarce possible even to bear the cold in the door-way for three or four minutes.

These experiments, our author assures us, were made with all possible exactness, and agree with many others, made in different parts of Siberia by his direction; and from these we may conclude, that the cold in Siberia is more intense than it has yet been found to be in any other part of the world.

It was not apprehended that a greater degree  
of

of cold existed any where, than that artificial one produced by Boerhaave, by means of concentrated spirit of nitre, which sunk the mercury 40 degrees below 0. in Fahrenheit's thermometer; which was supposed to be the point beyond which no animal could bear it.

But the utmost limits of cold are yet unknown; or to what degree an animal can subsist in it, when inured to it by little and little. The history of heat is alike imperfect. The celebrated Professor above-mentioned was induced to think, that a man could not bear, without the utmost danger, a greater heat than that which would raise the mercury to 90 in Fahrenheit's; but an ingenious and accurate correspondent of our author's at Astrachan informs him, that it not only rises there to this degree frequently, but even to 100, and he has seen it  $103\frac{1}{2}$ . Even in the bagnios in Russia, the heat is often equal to 100: it sometimes makes the quicksilver ascend to 108, 110, and to 116, as may be tried every day; and yet people not only bear them with impunity a few minutes, but often stay half an hour or an hour.

One necessary observation our author makes, which is, that the ball or tube containing the mercury ought to be as dry as possible on the outside, during these or any other trials with the thermometer: for the adhering moisture, by forming a cooler atmosphere round it, has sometimes occasioned a difference of ten degrees.

These are some principal facts given us by  
our

our author in his preface, relative to the natural history of Sibiria in general : what follows chiefly regards the work it is prefixed to.

As a just idea of this part cannot be exhibited in a narrow compass, the curious in this branch of science must be referred to the book itself.

I have only to acknowledge with gratitude the instruction and entertainment I have received from this elaborate work : it is a tribute justly due to the learned and ingenious author, in return for the pains he has taken, and the fatigue he has endured in this inhospitable region ; and to entreat your indulgence, if I have flattered myself too much, in apprehending this excerpt might afford you some amusement.



AN  
ACCOUNT  
OF THE  
PUTRID SORE-THROAT.

MA

W O O U N T

OF THE

ROBERTSON'S

## P R E F A C E\*.

WHEN the following treatise was first published in the year 1748, the disease which is the subject of it was not generally known in England, though it had spread like a plague through many of the southern parts of Europe about a century before, and had carried off great numbers of people, children especially.

From the time of its first appearing in this nation, it has visited many parts of the kingdom, with different degrees of violence, as different causes contributed to render it more or less malignant.

It is probable that this kind of Sore-throat may continue amongst us for the future, breaking out with more or less severity, as seasons, situations, and other circumstances, may concur. And,

Though its aspect has sometimes varied, according to the epidemic constitution, yet upon the whole it has seldom, in any place that I have heard of, deviated so far from the following description, as to leave it doubtful under what species of disease it ought to be ranked.

\* The sixth and last edition of this interesting production was reprinted in 1777; to which, and the preceding edition only, this Preface was prefixed.

*Editor.*

Warranted

Warranted by the authority of those Physicians who had early and extensive opportunities of observing this distemper in Italy, Spain, and other countries, at its first breaking out in Europe, as well as by the experience of some Physicians at home, the late very eminent and learned Dr. Letherland particularly, instead of treating it as an inflammatory disease, which a Sore-throat was generally deemed to be in this country, a warmer regimen was proposed, and such as is most commonly pursued in putrid fevers, and disorders allied to them.

This method has for the most part succeeded very happily; and it now seems to be the concurrent opinion of the most experienced in the faculty, that a generous and cordial regimen is in this species of Sore-throat the most salutary.

Amongst all the symptoms which attend this disease, there is none more formidable than perpetual watchfulness, with a delirium. These symptoms most commonly affect adults, and especially the sanguine and plethoric.

The throat, in these circumstances, is seldom much ulcerated; this part is the least of their complaints: the patients are hot, restless, and, though delirious, are sensible for a moment, and answer questions put to them, not improperly. The skin is covered with a deep erysipelatous redness, and always dry, as they are continually moving about. The pulse is quick, small, and hard; the urine various, often turbid, yet sometimes clear and flame-coloured.

In such cafes bleeding seems not only allowable, but neceffary, eſpecially by cupping from the back of the head, or by leeches from the temples; from the arm perhaps it might occaſion too great faintneſs; and a retreat of that eruption, which though no critical diſcharge, but rather a ſymptom of malignity, ought not to be reſſeſſed.

After bleeding, the Bark, conjoined with alexipharmacs, as the ſimple or compound powder of *Contrayerva*, *Confeſſio Cardiaca*, or the like, may be exhibited, in quantity and frequency proportioned to the age and ſymptoms.

The uſe of the Bark in the cure of this diſeaſe, was unknown to the early practitioners. It is but of late that this celebrated medicine has been uſed with freedom in this as well as in other putrid diſeaſes, and with great advantage.

The difficulty of prevailing upon children afflicted with this diſtemper to take any kind of medicine, put me early on trying the Bark in clyſters, and ſometimes when there ſeemed very little chance of relieving them by any means. To very young children, two or three drachms of the Bark, in fine powder, have been given every ſix hours, in three or four ounces of broth, as a clyſter, adding a ſmall quantity of the *Eleſt. à Scordio* to the ſecond or third, if the firſt was diſcharged too ſpeedily; and this has ſaved

many, when not a drop of any medicine, and scarcely any kind of nourishment, could be swallowed.

Adults may take half a drachm of the powder in an ounce and a half of the decoction, warmed with any grateful compound water, every two or three hours; taking particular care to prevent any considerable tendency to a diarrhœa, from the use of the medicine.

Free, but not cold air, plenty of liquid nutriment and generous, with constant attention to keep the patients clean, their mouths and throats often washed, and their linen changed, contribute greatly to the cure of this disease. While their skin is covered with that deep efflorescence, if they are at all sensible, they often complain of the least admission of cold air, and very frequently of much sickness and oppression, if this efflorescence speedily disappears.

To favour this eruption, it will always be proper to put those who are seized with this distemper to bed as early after seizure as possible, and to give the mild and cordial diaphoretics. And, as a preservative, I have often recommended the Bark to be given both in decoction and substance, with the addition of such a quantity of the volatile tincture of *Guaiacum*, as may render it gently purgative.

Though the Faculty and the Public are now sufficiently convinced of the existence of this distemper, and it may seem, therefore, needless

to

to continue so many testimonies of it; yet as this recapitulation may serve as an index to some of the most approved authors on the subject, it may not be without its use to inquisitive practitioners; and others may easily pass it over to a part in which they are more immediately interested, viz. the knowledge and cure of this disease, as it has appeared, and still continues to appear, in many parts of this nation.

*Nov. 25, 1769.*

*J. F.*

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 appear, in many parts of this nation.

1753

Nov. 22, 1753



## P A R T I.

Of the SORE-THROAT attended with  
ULCERS;

As it appeared in SPAIN, ITALY, SICILY, &amp;c.

**T**HE disease which is called, by the Spaniards, *Garrotillo* \*; by the Italians, and other nations, *Morbus strangulatorius*, *Pestilens Faucium Affectus*, *Epidemica Gutturis Lues*, and by divers other appellations †; is said to have appeared first in Spain about the year 1610;

\* Ab Hispanis Garrotillo appellatur, ut eadem patiantur Angina laborantes, quæ facinorosi homines, cum injecto circa collum fune strangulantur. Epist. R. Moreau ad Th. Barth. Epist. Med. Cent. i. p. 336.

† Affectus suffocatorius, Carbunculus anginosus, Phlegmone anginosa, Angina pestilentialis, Morbus Gulæ, Morbus Puerorum, Pestilens ac præfocans pueros abscessus, Tonsillæ pestilentes, *Αρχόννη λοιμώδης*, Aphthæ malignæ, Passio anginosa, Laqueus gutturis, &c. Vide Cortes. Miscel. Med. p. 666. Severin. & Epist. Ren. Moreau ad Th. Barthol. de Laryngotomia.

to have spread from thence to Malta, Sicily, Otranto, Apulia, Calabria, and the Campagna, in the space of a few years; and to have broke out at Naples in 1618, where it continued upwards of 20 years ravaging the different parts of that kingdom\*.

It is not certainly known how much longer it remained in these countries, or to what others it was communicated at that time, its declension being as obscure as the causes it sprung from. That it wholly disappeared in these parts, soon after the time above-mentioned, seems probable, from the silence of those physicians, who have published their observations made in the places, which had so severely felt the effects of this distemper.

Several writers, as Wierus †, Forrestus ‡, Ramazzini §, and others, take notice of epidemic affections of the throat, in some respects resembling the disease here described; but a little attention to the symptoms of each will, I think, discover an essential difference between them. The same, I think, may be said of the sore-throat and the scarlet fever, which shewed itself at Edinburgh in 1733 ||.

\* Severin. de recondita abscessum natur. p. 446.

† Joh. Wieri Observat. lib. vi. de Angina pestilentis epidemica, Oper. p. 910.

‡ Pet. Forrest. Observat. lib. vi. de Febribus publice graffantibus, p. m. 150.

§ Bern. Ramazzini Constitutiones Epidem. Oper. p. 195, & seq.

|| Medical Essays, vol. iii. p. 26.

Tournefort, in his voyage to the Levant \*, seems to have met with this disease in the islands of the Archipelago; at least so far as one can judge from the imperfect description we have of it. His account is as follows :

“ When we were in this island (Milo) there  
“ raged a terrible distemper, not uncommon in  
“ the Levant; it carries off children in twice  
“ 24 hours: it is a carbuncle or plague-fore in  
“ the bottom of the throat, attended with a  
“ violent fever: This malady, which may be  
“ called the child’s plague, is epidemical, tho’  
“ it spares adult people. The best way to  
“ check the progress of it, is to vomit the child  
“ the moment he is perceived to grow heavy-  
“ headed. This remedy must be repeated, ac-  
“ cording as there is occasion, in order to eva-  
“ cuate a sort of *aqua fortis* that discharges it-  
“ self on the throat. It is necessary to support  
“ the circulation of the juices, and the strength  
“ of the patient, with spirituous things; such  
“ as the *Theriaca*, *Spir. vol. oleos. aromat.* and  
“ the like. The solution of liquid styrax in  
“ brandy is an excellent gargarism upon this  
“ occasion. Tho’ it is a case that requires  
“ the greatest dispatch, the Levantines are sel-  
“ dom much in haste in the cure of any dis-  
“ ease.”

This account does not disagree in general with that which has been left us of the *morbis*

\* Tournefort’s Voyage to the Levant, vol. i. p. 135.

*strangulatorius*; only he is singular in asserting it to arise from a kind of *aqua fortis* discharged upon the parts; but his favourite study had engrossed his attention, and to this we must impute both the present mistake, and his want of accuracy and precision too frequently, when he treats upon medical subjects.

When it first broke out in the countries above-mentioned, it soon engaged the physicians of those times, as well to observe its nature, effects, and whatever might contribute to its cure, as to vindicate their respective systems and opinions; and out of such of the tracts then published as I have had an opportunity of perusing, the following account of it, as it appeared at that time, has been collected.

Ludovicus Mercatus, physician to Philip II. and III. Kings of Spain, among his Consultations, published in tome V. of his works \*, has one upon this disease †. He mentions it as a calamity which had but newly appeared, and at that time affected several provinces and cities of that kingdom. He has related only one case; but in commenting upon it, according to the method of writing on diseases then in use, he takes notice of several circumstances relative to it, and makes some observations respecting the cure, which, tho' they seem to

\* D. Ludovici Mercati, medici a cubiculo Philippi III. Hispaniarum Regis, &c. Oper. Tom. 5. Francof. 1614.

† De Faucium et Gutturis anginosi et lethalibus Ulceribus. Consultatio xxiv. p. 137.

have been neglected by many who succeeded him, experience hath since shewn to be just: some of these will be pointed out in their proper places; and, considering that he wrote very soon after the distemper broke out, the approbation prefixed to this part of his work being dated in 1612, they are a proof of his attention and sagacity.

Johannes Andreas Sgambatus, a physician of Naples, published a treatise upon this subject in 1620 \*. He gives us a methodical and pretty exact history of the symptoms, and method of cure both general and topical, together with a summary view of the disputes, which were at that time managed with sufficient heat and acrimony, in relation to its name, cause, and nature; about which they were as much divided as they were about the method of cure; each party appealing to Hippocrates, Galen, Avicenna, &c. for the support of their opinions concerning a disease, which it is not certain that those whom they appeal to ever knew.

Johannes Baptista Cortesius, in his *Miscellanea Medica* †, takes notice of this disease, and de-

\* De pestilente faucium affectu Neapoli sæviente, opusculum, auctore Jo. Andrea Sgambato, philosopho ac medico Neapolitano, et academico otioso. Neapoli excudebat Tarquinius Longus, 1620, in 4to.

† Joannis Baptistæ Cortesii, medici ac philosophi, in Messanenſi academia praxim ordinariam e prima fede interpretantis, Miscellaneorum Medicinalium Decades Denæ. Messanæ 1625, in fol.

scribes its principal symptoms, in a letter to Jo. Anton. Anguilloni, physician in chief to the Maltese galleys. He considers it indeed as a different distemper from that which infested Naples, and other parts of Italy; tho', from his own account of it, there appears little reason to question its being the same. He seems to have been led into this mistake, by considering the disease he treats of, as contagious only in a certain limited sense, whilst the Italians, as some of the Spaniards had also done, declared theirs to be pestilential and contagious without restriction. He allows, that the breath of a person affected might convey the contagious effluvia to another near at hand; and gives an instance of one who got the disease, and died of it, by trying, at his friend's request, who then laboured under this disease, if his breath was affected \*;

\* *Divi Francisci Custos, vir doctrina et moribus insignis, hac lue obsessus, tonsillas solummodo et gargareonem inflammatione læsa habebat, et continuo querebatur se percipere in ore fœtorem quendam; et ut hac de re certior redderetur, ad se vocavit baccalaureum quendam sibi amicissimum, qui maximo affectu assistebat, rogavitque ut vellet olfacere, percipereque naribus, an verum esset talem fœtorem emittere, an ab ejus imaginatione prodiret: olfecit baccalaureus, me (scil. Cortesio) præsentem, et multis aliis: at statim non multis elapsis horis decubuit sola faucium et glandularum inflammatione vexatus, absque aliqua manifesta corruptione partium, omnibusque præsidiiis ex arte factis, quarto die suffocatus periit; et tamen Custodem non tetigerat, sed solo olfactu aerem ab ore prodeuntem naribus traxerat: quare ab hujusmodi exemplo veni in sententiam hunc morbum non esse absque aliqua contagione. Cort. Miscel. p. 698.*

for from this circumstance they guessed at the degree of danger attending the sick.

In 1636, Ætius Cletus, of Signia in Italy, published his treatise *De Morbo strangulatorio* \*. He mentions some facts relating to it, that had escaped Sgambatus and Cortesius, which will be taken notice of hereafter.

Marcus Aurelius Severinus, Professor of Anatomy and Surgery, and physician to the Hospital of Incurables at Naples, wrote a dissertation upon this disease, under the title of *Pædanbone Loimodes, seu de pestilente ac præfocante Pueros Abscessu*; and annexed it to the second edition of his book *De recondita Abscessuum Natura*, which was printed in 1643 †. From a person of his capacity, and furnished with the best opportunities of seeing the disease in every stage and condition, we might reasonably have expected such observations as would enable one to form a just idea of this distemper; but we meet with little of this kind in his performance. He has indeed mentioned some circumstances relating to its history, not taken notice of by the other writers I have seen, and his method

\* *De morbo strangulatorio, opus Ætii Cleti Signini, doctoris medici et philosophi.* Romæ 1636, 8vo.

† *De recondita abscessuum natura, libri 8. Marci Aurelij Severini Tharsiensis, philosophi et medici, regio in gymnasio Neapolitano anatomæ et chirurgiæ professoris.* Editio secunda, Francofurti ad Mænam 1643. And again printed with Bartholine's *Exercitationes*, as a commentary upon it, and Villani's *Therapeuta Neapolitanus, seu Veni mecum Consultor.* Neapoli 1653.

of cure is different from the rest; but he refers us to others for an account of the symptoms, and contents himself with reciting and commenting upon Aretæus's description of the *Ulcera Syriaca*, which he takes for granted to have been the same with the disease at that time infesting Naples; tho' very probably without sufficient reason.

Petrus Michael de Heredia, physician to Philip IV. King of Spain, in his *Disputationes de Morbis acutis*, treats of this disease expressly in several chapters under the title of *Angina Maligna*. His history of the symptoms contains several circumstances which were not taken notice of by any other writer I have seen; so that though he was probably among the last of the Spanish physicians who wrote upon this subject, yet the diligence of his predecessors had not wholly exhausted it. In the second edition of Heredia's works, which was that I made use of\*, nothing appears whereby to ascertain the time exactly when he wrote his account; but as he mentions the *Polyanthea* of De la Parra, which, according to Ren. Moreau in Bartholine's Epistles, was printed at Madrid in 1625, it is plain that he must have written after this time.

One might justly expect some curious obser-

\* Petri Michaelis de Heredia Complutensis—Philippi IV. Hispaniarum regis archiatri—Opera medicinalia—Lugduni 1673. fol.



vations upon this disease, from a person so well qualified for it as Thomas Bartholine: he was in Italy whilst it raged there, and, it might be supposed, would be attentive to the minutest circumstance relating to it, and be inquisitive enough to know what men of character had said upon it. But the Treatise which he wrote upon this disease, and published in 1646 \*, contains so little to the purpose, that it is difficult to conceive for what end it was written, unless to compliment his master Severinus, which he does very liberally †.

\* Thomæ Bartholini de Angina Puerorum Campaniæ Siciliæque epidemica exercitationes, Lut. Parisior. 1646.

† Zacutus Lusitanus also mentions this disease, and relates an unhappy instance of its effects in the following terms:

In his partibus (scil. faucibus) ex humoris virulenti affluxu gignuntur carbunculosæ inflammationes, quæ pestis diræ, aut veneni promptissimi instar, contagio quodam, pueros et adultos corripunt; et sævis maleficientissimisque stipatæ symptomatis citissimam necem inferre solent. Malum in Hispania non multis abhinc annis frequens, vulgus medicorum Hispano sermone *Garrotillo* nuncupat; de cujus essentia, periculo, brevitate, et complicatione ultivi et ulcerosi tumoris, ac deleteria corruptione, laconice dicam. Hoc fuit pressus biennis infans, sanguineus et obesus. Primo die ex catarrhosa defluxione in suffocationem pene incurrit, difficulter respirabat, et lac deglutiebat, et febris acuta affectus, nec plorare poterat. In parte gutturis dextra externa glandulosus apparuit tumor cum dolore multo. Secunda die intra fauces ulcus visum est ad nigrum vergens, quod putrilago et mollities multa comitabantur; et ab ore fœtor horribilis prodibat, magnum certe corruptionis completæ indicium. Tertio die nullis adjutus auxiliis strangulatus est extinctus. De Praxi Medic. Admiranda, lib. 1. observ. 20.

According

According to the accounts which have been left by these Authors, it appears, that the disease which they describe was extremely malignant, and most particularly fatal to children, though adults, if they were much conversant about the sick, were very often seized with it; yet more of these recovered in proportion than of children; and it was observed, that more boys got well through the disease than girls: some thought, that such of this sex as had black eyes suffered more from it than others.

As it was sometimes observed to carry off whole families together, and to spread to those places first, between which, and the countries affected by it, the communication was most frequent; and also that children, sent away from the towns where it raged, in order to avoid it, escaped whilst they were kept at a distance, but had it on their return, if the disease was not extinguished; it was almost universally allowed to be contagious\*.

Those who were seized with it, first complained of a pain or soreness in the throat, with a stiffness of the neck, an uneasiness on moving it, as if a cord was twisted about it, a difficulty in swallowing, and frequently in breathing also, with a disagreeable fetid smell and taste. On inspection, the *Uvula*, the *Tonsils*, *Pharynx*, and the whole *Fauces*, appeared of a remarkably florid red colour, like that attending

\* Quod ad contagium attinet, hoc communi omnium consensu atque experimento evincitur. Severin. p. 442.

an *Erysipelas*: this colour was not uniformly intense, but some parts seemed to be of a deeper dye than others. The parts above-mentioned were swelled more or less, though not always so much as to affect respiration, as in a common *Angina*.

If the attack was violent, they had an extreme difficulty in breathing, and also in swallowing, with a kind of compressive pain and straitness of the breast and back, a redness of the whole face and neck, great heat of all the parts affected, the voice much injured, an unquenchable thirst, and the patient seemingly in danger of being choaked\*. In some, the swelling and ulcers of the *fauces* were apparent upon looking into the mouth; in others, nothing could be seen, but a most offensive putrid smell was perceivable. A fever came on with the other symptoms, and was frequently accompanied with small pimples and eruptions like flea-bites. In very bad cases, this fever, which Mercatus calls a most malignant one †, did not always discover its violence or malignity at

\* ——— difficultas respirandi, et non raro deglutiendi, cum pectoris et dorsi dolore ac veluti compressione suffocante, simul cum pestilente odore, et vehemēti harum omnium partium ardore, et rubore totius oris et colli, cum vocis et loquelæ vitio, ac linguæ extractione, et siti incompefcibili. Mercat. Consult. p. 136.

† Maxime ob malignissimam febrem, quam plerumque sibi adjunctam habet, &c. Consult. p. 136.

first; but it was not the less formidable on this account\*.

On the same day, or the day following, such parts of the *fauces* as at first seemed to be of a deeper colour than the rest, turned white, ash-coloured, or black: this was not occasioned by any crust or matter superinduced upon the parts, but proceeded from a gangrenous colliquation of them, the substance itself being mortified.

The voice was hoarse and obscure, not as in a common cold, but as it is in those people who have venereal ulcers in the throat: so that, from this affection of the voice alone, some were able to guess at the disease †.

The neck and throat soon after began to swell externally; the tumour was of a soft œdematous kind, and increased in magnitude as the disease advanced. All the symptoms were aggravated during the night. If the patients had any interval of quiet, it was commonly in the day-time ‡. About the fourth day this tumour was generally grown very large, and the white places in the *fauces* began to turn black; a putrid corrosive sanies was discharged by the

\* — nec multum fidere oportet, si febris mox non apparuit aut succrescat, nam sæpe citius suffocat affectio, quam causa succendatur; ac non raro malignitas humoris corrumpit spiritus et mortem accelerat, sine eo quod febris succendatur. Mercat. Consult. p. 137.

† Severin. p. 442.

‡ Sgambat.

mouth and nostrils \*; the breath grew extremely offensive; respiration, if hitherto not much affected, now became difficult, and the patient expired in a very short time.

Though this was the common progress of the disease, where it terminated unhappily, yet it often varied from this type, and was attended with very different symptoms. Some had an extreme difficulty of breathing almost from the first; some had a violent cough; some were comatous; others had a delirium; some died in a lethargic stupor; others bled to death at the nose; whilst others again had none of these symptoms, but were carried off suddenly by an instantaneous suffocation. The *œsophagus* in some was sphacelated down to the stomach; the *aspera arteria*, in others, to the lungs. As these could only breathe in an erect position; so those could swallow nothing when the parts were so affected. The nostrils discharged a fetid ichor, sometimes mixed with blood; and sometimes blood alone, without mixture. This bleeding at the nose seemed at first, in one case,

\* Quibus etiam accedit sublimis respiratio et alta ac spirituum revulsio, cum maxima pinnarum nasi distensione.—Saniei per os et nares excretio, variis ulcerum coloribus et intensissimo fœtore nauseam plerumque movente cum fordida excretionem. In aliquibus vero extra, prope cervicem, et infra mentum glandulæ apparent, pestiferi morbi naturam redolentes, et universa cervix, et collum intumescunt, et fauces cum robore saturato, instar laqueo suffocatorum. Merc. Consult. p. 136.

to give relief; but the patient soon after died \*. Mercatus relates an instance of a child that had the disease, in which the acrimony of the humour discharged from the ulcers was so great as to inflame the nurse's breast, and brought on a mortification. He also tells us, that the father of the child whose case is described above, having frequently put his finger in the child's mouth, to draw out the viscid phlegm, had his finger inflamed, and was seized with the same distemper †.

These were the symptoms in general, and they judged of the event by the mildness of their progress, or the contrary: though it was agreed, that nothing could be more fallacious than this disease; and that the most experienced were often deceived in their prognostic.

If the redness of the *fauces* above described, which appeared at first being seized, was succeeded by an ulceration, without any of that whiteness (which for the future I shall call sloughs), if the swelling about the neck and

\* Severin. p. 440.

† — erat quidem dira humoris conditio adeo perniciofa, efficax et contagiofa, quod digitum patris indicem, quo extrahebat eum succum ab ore filii, mordicaret, et in ruborem moveret cum dolore: tandem mox pater conquerebatur de difficultate respirandi et deglutiendi cum dolore et tumore faucium, ac faturato colore, et glandulis extra apparentibus juxta mentum. Ex quibus secundo die halitum prave olentem expirabat; ita ut jure optimo possis colligere, contagio filii patrem fuisse affectum. Mercat. Conf. p. 139.

throat was not large, if the patient discharged by the mouth considerable quantities of thin pituitous matter, if the breath was not fœtid, and the patient had no disgust to his food, if the eyes retained their proper lustre, all was judged to be secure.

On the other hand, if the lustre of the eyes was considerably faded\*, if the external œdematous tumour was very large, if the breath stunk, if the *fauces* were livid or black, with a coma or delirium, if with these the patient had an aversion to his nourishment, and his breathing became difficult or laborious, the danger was judged to be extreme.

It was not observed that the disease had any stated crisis; or that the signs of recovery, or death, appeared on any certain day. Some died on the first, others on the second, third, and on every day, to the seventh; though the greatest part died before the fourth †. Those who survived the fourteenth were thought to be out of danger, at least from the disease itself ‡; though some dropped off unexpectedly, after a much longer reprieve ||.

The

\* Hoc unum salutis est indicium vel interitus: dum oculorum nitor adservatur, salutis spes semper adest; quo tempore hic deperit, in propinquo mors est. *Ætii Cleti Op.*

† ——— indies magis ac magis hæc accidentia crescunt, donec brevissimo tempore laborantium majorem partem perimat, idque non raro intra quartum diem. *Merc. p. 137.*

‡ *Ætii Cleti Op. de Morbo strangulatorio.*

|| Quinimo post xxx dies, et xl. jam prærepti morbi furoribus,

The consequences of this disease were often felt a long time after it had ceased. An excessive languor and weakness continued for many months; and the voice or deglutition was frequently affected, so as to be perceivable in some almost a year after\*.

It was however observed, that notwithstanding the disease most frequently was accompanied with symptoms of pestilential malignity, yet it sometimes appeared with a much more favourable aspect; its progress not being so quick, nor its symptoms so violent and dangerous, as hath here been described to be the case in general †. At its first breaking out in any place, it was commonly the most severe; it then spared no age or sex, but swept off adults together with infants ‡. By degrees it became less violent, and at length either wholly disappeared, or was of so little consequence as to be disregarded.

We are directed, by most of the authors I have seen, to begin the cure of this distemper, whenever we are called in time, with evacuations, the chief whereof are bleeding and purging: which of the two ought to precede, was not a little disputed; but it was on all hands

ribus, præter omnium opinionem ex improvise sunt extincti. Adeo scil. latitans et recondita veneni vis est. Severin.

P. 44<sup>o</sup>.

\* Æt. Clet.

† Severin.

‡ — ut pestis more in citissimam mortem pueros et adultos deducat. Merc. Consult. p. 135.

agreed,



agreed, that unless these remedies were very early applied, as they were principally useful by way of revulsion, they were not only of no advantage to the patient, but highly injurious\*. Observations of this kind, we are told †, induced several physicians to omit bleeding entirely; and it was, probably, the reason why those who were friends to venesection ordered it more sparingly in this, than in most other acute diseases ‡. Se-  
verinus,

\* — disputatione cepimus de sanguine extrahendo: “ siquidem non defuerunt medici, qui id renuerunt:” cæterum unanimi consulentium consensu, primo die sanguinem misimus, cruribus scarificatis, et mox octava noctis hora brachiis, aut si ultra duos annos fuerit natus, ex vena brachii: “ in hoc malo plurimum vereri oportet, vires plurimum de-  
“ jicere.” Mercat.

Brevissime secandam esse venam in hoc consentitur omnes. P. Mich. de Heredia de Morb. acut. p. 101.

† Circa quod præsidium (venæsectionem) in pueris exequendum, consulo ne differatur, quia ejus occasio solum est, antequam fluxio in partibus contenta ad putredinem commigret. Nam tunc temporis, si sanguinem fuderis, summo perē lædes, quæ causâ fuit quod multi medicorum, viso hoc damno, renuerint sanguinem mittere. Mercat. Consult. p. 138.

‡ In hoc sacro igne non mittendus est sanguis in ea quantitate ac in angina exquisita.—Placuit quibusdam in hoc morbo secare venas sub lingua; alii admoverunt hirudines collo; mihi nulla istarum evacuationum unquam probari potuit. Nam cum tumor superveniens ex sanguine non oritur, frustra adhibentur ea auxilia quæ ad sanguinem ex parte affecta evacuandum excogitata fuerunt. Sgambat. de Pest. Faucium Affect.

Esse vero efficiendas parcas missiones in quantitate, dum revellere intendimus, docuit antiquitas.—Quod præceptum

verinus, who was by no means a timid operator, orders from four to eight ounces to be taken away; which, considering the common practice in those countries, is a very small quantity\*.

Some not only gave the precedence to purging, but imagined it alone was sufficient; alledging as a reason for it, that some children have recovered where this evacuation only had been employed; whilst bleeding had been injurious, by lessening the strength †. Purging was however commonly allowed the second place by those who were advocates for bleeding, but under the like restrictions ‡. They generally made use of manna, rhubarb, fenna, tamarinds, fyrup of roses, and the like, for this purpose. But it was always inculcated, that, in directing these evacuations, the patient's strength was especially to be regarded; since whatever diminished this, in the end was undoubtedly prejudicial ||.

magis observandum in morbo præfenti, in quo nimis timemus virium jacturam. Copiosa enim sanguinis missio, præterquam quod minus proprie revellit, dejecit vires. P. M. de Heredia, ubi supra.

\* Severin. ubi supra.

† — hoc solo præfidio aliquando visum fuit, pueris ad integram sanitatem recuperandam sufficere, sicut aliis sanguine detracto, vires plurimum fuisse dejectas. Merc. Conf. p. 138.

‡ Quod evacuandum morbus exposcit, evacuetur brevissime. Idem, p. 102.

|| — in morbis malignis breviter destruentibus vires, at poscentibus simul robur animalis virtutis ad sui sanationem, multum evacuare non licet. Heredia, p. 102.

Severinus orders an antimonial vomit to be given at the first attack, and a cooling gently astringent gargle to be used night and day. He then orders a clyster, takes away some blood from the jugular, and gives from fifteen to twenty-one grains of bezoar mineral twice a day, or oftener, as occasion requires, with thin diluting liquors, in order to raise and promote a moderate sweat. He gives five or six grains of the same medicine to children at the breast, and commends it highly. He scarifies the discoloured parts in the *fauces*, in order to let out the corrosive virus; a practice which, though it was recommended by the Spaniards \*, was disliked by some of the most eminent Italians †.

Cupping, with scarification, was universally approved, and commonly practised. Leeches were also applied, by way of revulsion, to different parts.

Considerable benefit was expected from ligatures made on the extremities, and from chafing the limbs with the hand, or a cloth; also from cupping without scarification; apprehending that a revulsion from the parts affected was by this means procured; and that some portion of the morbid matter was carried off by the pores of the skin.

\* Si vero malum non mitescat, sed gravius affligat partem, quod constabit ex lucido aut nigro colore, vel ex nimia mollitudine—cum intolerabili fœtore, scarificabitur profunde, prout partis natura tulerit. *Heredia*, p. 105.

† *Cort. Miscel.* p. 697.

Some of the Spanish physicians recommended vesicatories of cantharides, and other acrid or caustic substances, to be laid on each side of the neck; but they had not the same opinion of their usefulness, when applied to the back or shoulders. Heredia expressly tells us, that he had seldom found any benefit from them\*. Neither do the Italian physicians seem to have been fond of them; the progress of the disease was, in their opinion, too swift to admit of any relief from either caustics or vesicatories †, both of which had been made use of in Spain ‡.

To moderate the continual and malignant fever which accompanied this disease from the first, and which was thought by some to be only symptomatical, and had therefore the last place in their consideration ||, they had recourse to such internal medicines as were deemed cordial and alexipharmac. Armenian bole, bezoar both animal and mineral, and, according to the philosophy of those times, the precious stones were reckoned of this class. Of vegetable products, the juices of citrons, lemons, oranges, pomegranates, and sorrel; vinegar, the juice and decoctions of borage, bugloss, *Carduus Benedictus*, endive, scabious, scorzonera, scordium, with many

\* Multi etiam vesicatoria consulunt spatulis applicata.—  
Quod auxilium parum prodesse semper vidi. Heredia, p. 108.

† Sgambat.

‡ Heredia, ubi supra.

|| Febris etiam continua statim in initio apparet, symptomatica quidem. Heredia, p. 97.

others of the like nature, were recommended. But a decoction of the contrayerva root was in the highest esteem in this disease, both as an alexipharmac in general, and for its peculiar efficacy, when applied as a gargle; to which Mercatus, from his own repeated observations, gives a very ample testimony\*.

But as they found from experience, that no regular crisis or concoction of the humours was to be waited for; that no evacuations, except by way of revulsion, after the access, were of use †, they began to consider the disease as local, as a particular ‡ morbid affection of the *fauces*, and applied themselves chiefly to topics, without laying much stress on internals.

In this part of their directions they have therefore been more explicit; and some of them, in order to point out their applications with more propriety, have divided the course of this disease into four different periods ||.

The first they called the state of inflammation. In this, mild repellents were thought necessary;

\* Hoc unum observantissimum habeo, nimirum omnes oris et gutturis collutiones efficere supra decoctum ejus celeberrimi medicamenti, quod medici Hispani Contrayerva nuncupant, maxime si mucosa et viscida pituita abundaverit. Mercat. Consult. p. 138.

† — Experimento monstratur, quamcunque evacuationem per alvum, aut sudorem inutilem esse et nocivam, quia cum non profit, necessario debilitat. Hered. p. 100.

‡ Cortes. Miscel. p. 703.

|| Sgambat. de Affectu Faucium pestilente.

such as vinegar in barley-water, juice of the pomegranate, syrup of roses, mulberries, purslain, or a decoction of barley, red roses, liquorice, and plantain; to two pounds of which were added *acet. rosar.* ℥jss. *syr. Diamor.* ℥j. *M\**. If it was required yet more repellent, a small quantity of allum was added.

The second stage is that wherein the white sloughs begin to appear, which is a step towards a gangrenous colliquation. In this they ordered mild abstersgents and antiputrescents; such as a decoction of lupins, beans, vetches, with honey of roses †.

The third is, when the ulcers appear foul and fordid, and begin to look black, a real mortification being come on, sometimes penetrating to a considerable depth, with great putrefaction. More powerful astringents and exsiccants were requisite in this case; such as powder of myrrh, and a little allum mixed with honey, or honey of roses; bole dissolved in treacle-water; a solution of *unguent. Ægyptiacum* in barley-water was also much in use ‡. Allum, sulphur, copperas, verdigrease, oil of vitriol, oil of sulphur, spirit of salt alone, or mixed, or diluted in different liquors, were much employed. In this case,

\* Heredia, p. 105.

† Idem, *ibid.*

‡ *Celebris utilissimaque est unguenti Ægyptiaci lotura: sumuntur quidem ℥ij. et infunduntur in ℥ij. aquæ hordei, plantaginis, vel feri lactis: post infusionem percolatur per linteum, et colatura tangitur ulcus. Idem, *ibid.**

sometimes the acid spirits were dexterously applied to the parts affected, by means of an armed probe; but they were oftener diluted with syrup or honey of roses, and in children poured into the mouth.

Though many had recourse to these powerful remedies, and even to arsenic itself, yet the most experienced were justly afraid, that the use of such caustic and acrimonious applications was often attended with pernicious consequences, both to children and adults; and they are therefore, with good reason, condemned by Mercatus\*.

Nevertheless some went so far as to advise the actual cautery, if the potential ones did not succeed, and gave directions for the time and manner of their application †; but as this operation will be liable to all the objections made to the former, to have mentioned it will, I imagine, be thought sufficient.

Though the author last quoted advises us to scarify the black or livid crusts or sloughs, yet he gives us a caution not to tear them off, or forcibly to separate them, as the consequences would be an increase of pain and inflammation;

\* Ego quidem arbitror, plures pueros interfecisse usum horum medicamentorum, quæ caustica sunt, quam affectionem ipsam. Merc. Consult. p. 139.

— compertum habuimus in hoc viro, et aliis laborantibus, hæc caustica inflammationi et ulceri summopere esse nocua: suppurantia corruptioni. Id. p. 40.

† Heredia, p. 106.

whence the ulcers would spread, and at the same time eat deeper\*.

In the fourth stage the putrefaction is supposed to be extinguished, the mortified parts cast off, and an ulcer only remains. In this case, the fume of white amber thrown on live coals, and received into the mouth, as a *suffitus*, was advised; also the *vinum myrrhites*, a decoction of guaiacum, roses, balaustines, pomegranate-peels, by way of gargle; medicines that were supposed to dry with some degree of astringency.

Such was the appearance of the *Angina maligna*, or ulcerated fore-throat, at its first being taken notice of in Europe; and such were the methods of treating it then in use. In this recital I have been the more prolix, inasmuch as the disease described in the following pages, is the same with the *Angina maligna* of these writers, with whose experience and observations it may doubtless be of use to us to be acquainted.

\* Heredia, p. 109.



P A R T II.

Of the SORE-THROAT attended with  
U L C E R S ;

As it has appeared in THIS CITY, and Parts adjacent.

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ACCORDING to the information I have received from several eminent persons of the Faculty, it was in the year 1739, that a disease was first taken notice of, which was thought to be the *Morbus strangulatorius*, already described, and which differed in no essential circumstance, as far as I can learn, from the distemper which is the subject of this treatise.

The sudden death of two children in a family of distinction, and of some others near the same part of the town, whose complaints had chiefly been of a Sore-throat, seem to have occasioned this suspicion : but as very few cases of the like nature occurred after these, or, if they happened, passed unobserved, little mention was made of it during several years.

It

It began however to shew itself again in 1742, but not in so general a way as to render it the subject of much public discourse; for though such of the Faculty as were in the most extensive practice met with it now and then, in the City especially, it remained unknown to the greatest part of practitioners, till within these two or three years, in which time its appearance has been more frequent, both in town and the villages adjacent.

I am informed, that in the winter of 1746, so many children died, at Bromley, near Bow, in Middlesex, of a disease that seemed to yield to no remedies or applications, that several of the inhabitants were greatly alarmed by it; some losing the greater part of their children, after a few days indisposition. Some others of the neighbouring places were affected at the same time with the like disease; which, from all the accounts I have met with from those who attended the sick, was that here treated of. I am informed likewise, that it raged at Greenwich about the same time \*. It still continues in this

\* The Reader may be pleased to take notice, that the facts contained in the following narrative, where the contrary is not expressly mentioned, have all come under the Author's observation, who has endeavoured to relate what he has seen, and in such a manner as he thought would best contribute to public advantage. It may also be necessary to observe, that the disease is described as it appeared in 1747 and 1748, that if the symptoms should hereafter vary in any circumstance, the diversity may be attributed to the nature of the distemper, and not imputed to design or inattention.

City,

City, and sometimes shews itself in the villages about it, though at present with so mild an aspect as seldom to prove fatal; unless the subject is very unfavourable, or the disease hath been neglected, or improperly treated at the beginning; which circumstances, though of some importance in all cases, yet are of the utmost in this; as a wrong step at the first may put it out of the power of art to afford relief.

Though this disease has now been amongst us several years, and has consequently survived the different seasons, and all the variety of weather to which we are exposed, yet it seems to shew itself most frequently in autumn, and the beginning of winter; at least I have met with many more cases from September to December inclusive, than in all the other months together.

It may likewise be remarked, that the summers of 1747 and 1748 were dry, with some days in each uncommonly hot, for this climate; the mercury in Fahrenheit's thermometer rising in the shade, and within doors, one day to 78, and during several to 75 and 6. The autumns of the same years were as unusually temperate and warm; the wind continuing longer in the southerly points than has often been known at this season.

In this country, as well as in those where the *Angina maligna* was first taken notice of, children and young people are more exposed to it than adults: a greater number of girls have it than boys; more women than men; and the infirm  
of

of either sex are more liable to have the disease, and to suffer from it, than the healthy and vigorous: I have seen but few adults of this constitution affected by it, and not one who died of it.

When it breaks out in a family, all the children are commonly affected with it, if the healthy are not kept apart from the sick; and such adults as are frequently with them, and receive their breath near at hand, seldom escape some degree of the same disease.

It generally comes on with such a giddiness of the head as commonly precedes fainting, and a chillness or shivering like that of an ague-fit: this is soon followed by great heat; and these interchangeably succeed each other during some hours, till at length the heat becomes constant and intense. The patient then complains of an acute pain in the head, of heat and foreness, rather than pain, in the throat, stiffness of the neck, commonly of great sickness, with vomiting, or purging, or both\*. The face soon after looks red and swelled, the eyes in-

\* The vomiting and purging were but seldom observed to accompany this disease, at its first appearance amongst us, as I have been informed by some physicians of eminence, who saw it early; but it is generally agreed, that these symptoms almost constantly attended, in the manner here described, during the years 1747 and 1748, the time in which these observations were collected: and I have since found, that the above-mentioned symptoms have not so regularly appeared as at that time.

flamed and watery, as in the measles; with restlessness, anxiety, and faintness.

This disease frequently seizes the patient in the fore part of the day: as night approaches, the heat and restlessness increase, and continue till towards morning; when, after a short disturbed slumber (the only repose they often have during several nights) a sweat breaks out; which mitigates the heat and restlessness, and gives the disease sometimes the appearance of an intermittent.

If the mouth and throat be examined soon after the first attack, the *uvula* and *tonsils* appear swelled; and these parts, together with the *velum pendulum palati*, the cheeks on each side near the entrance into the *fauces*, and as much of them, and the *pharynx* behind, as can be seen, appear of a florid red colour. This colour is commonly most observable on the posterior edge of the palate, in the angles above the *tonsils*, and upon the *tonsils* themselves. Instead of this redness, a broad spot or patch, of an irregular figure, and of a pale white colour, is sometimes to be seen, surrounded with a florid red; which whiteness commonly appears like that of the gums immediately after having been pressed with the finger, or as if matter ready to be discharged was contained underneath.

Generally on the second day of the disease, the face, neck, breast, and hands, to the fingers ends, are become of a deep erysipelatous colour, with a sensible tumefaction; the fingers

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are frequently tinged in so remarkable a manner, that, from seeing them only, it has not been difficult to guess at the disease.

A great number of small pimples, of a colour distinguishably more intense than that which surrounds them, appear on the arms, and other parts. They are larger, and more prominent in those subjects, and in those parts of the same subject, where the redness is least intense; which is generally on the arms, the breast, and lower extremities\*.

As the skin acquires this colour, the sickness commonly goes off, the vomiting and purging cease of themselves, and rarely continue after the first day.

The appearance in the *fauces* continues to be the same, except that the white places become more ash-coloured; and it is now discoverable, that what at first might have been taken for the superficial covering of a suppurated tumour, is really a slough, concealing an ulcer of the same dimensions.

All the parts of the *fauces* above-mentioned are liable to these ulcerations; but they generally are first discernible in the angles above the *tonsils*, or on the *tonsils* themselves; though

\* The redness and eruption have not accompanied this disease so regularly, during the latter part of this winter †, as they did in the preceding seasons: in some cases they did not appear at all; in others, not till the third or fourth day; and, as I have heard, in some not till the fifth, and even later.

† 1754.

they are often to be seen in the arch formed by the *uvula* and one of the *tonsils*; and also on the *pharynx* behind, on the inside of the cheeks, and the base of the tongue, which they cover in the manner of a thick fur. Instead of these sloughs, where the disorder is mild, a superficial ulcer, of an irregular figure, appears in one or more of these parts, scarce to be distinguished from the sound, but by the inequality of surface it occasions.

The parotid glands \* on each side commonly swell, grow hard, and are painful to the touch: if the disease is violent, the neck and throat are surrounded with a large œdematous tumour, sometimes extending itself to the breast; which, by straitening the *fauces*, increases the danger.

Towards night, the heat and restlessness increase, and a *delirium* frequently comes on. This symptom, which appears in some even on the first night, seems to differ considerably from the like affection in other diseases. The sick commonly answer the questions put to them properly, but with an unusual quickness; they talk to themselves incoherently when left alone, and frequently betray the first tendency to this disorder, by affecting too great a composure: this, for the most part, happens to those who

\* Heredia takes notice of the same symptoms, and assigns a very probable reason for it.—In *Angina maligna non tument externa, quia in illas ex externis translata materia fuerit, sed quia ita adimplentur interna, ut materiam fluentem non capiant, et sic ad externa dilabitur.* Heredia, p. 99.

sleep but little; for some are comatous and stupid, and take little notice of any thing that passes.

In this manner they continue during two, three, or more days: they commonly grow hot and restless towards the evening; which symptoms, and the *delirium*, increase as night comes on: a sweat more or less profuse breaks out towards morning; and from this time they are easier during some hours, a faintness only continuing, of which they frequently complain more than of the rest of their sufferings.

The disease seems to have no stated period which can properly be called its *'Ακμή*, or height. Some grow easier from the first day of the attack; but, in general, the symptoms of recovery appear on the third, fourth, or fifth day, and proceed in the following manner:

First, The redness of the skin disappears; the heat grows less; the pulse, which was hitherto very quick, becomes slower; the external swellings of the neck subside\*; the sloughs in the *fauces* cast off; the ulcerations fill up; the patient sleeps without confusion, is composed when awake, and his appetite begins to return.

The pulse, during the whole course of this disease, is generally very quick; frequently 120 strokes, or more, in a minute: in some, it is

\* At least, of all the parts about the neck, except the parotids themselves; which sometimes continue swelled and hard a long time after the other symptoms abate, and at length suppurate.



hard and small; in others soft and full, but without that strength and firmness which usually accompany equal quickness and heat, in genuine inflammatory disorders.

If a vein be opened soon after the distemper is come on, the blood generally appears of a fresh florid red; the *crassamentum* is rather of a lax gelatinous texture, than dense or compact; the *serum* yellow, and in a large proportion\*.

The urine is at first crude, and of a pale whey-colour: as the disease advances, it turns yellower, as if the bile was diluted in it; and, soon after the patient shews any marks of recovery, it commonly grows turbid, and deposits a farinaceous sediment.

They seldom have any stools, if the symptoms are favourable, from the time when the purging, which generally attends the accession, ceases. This discharge is frequently bilious, and without any pain: though these evacuations differ in different habits.

They complain of thirst commonly less in this than in other acute diseases. The tongue is generally moist, and not often furred: in some nevertheless it is covered with a thick white coat or fur, and these generally complain of soreness about the root of the tongue.

The *uvula* and *tonsils* are sometimes so much

\* But it is often fizy when the disease has continued two or three days; and in some instances which lately occurred, it was so soon after the first attack.

swelled, as to leave but a very narrow entrance into the gullet, and this entrance frequently furrounded with ulcers or sloughs; yet the patients often swallow with less difficulty and pain than might be expected under such circumstances\*.

They frequently complain, soon after they are taken ill, of an offensive putrid smell affecting their throats and nostrils, which oft occasions sickness before any ulcerations appear.

In those who have this disease in a severe manner, the inside of the nostrils, as high up as can be seen, frequently appears of a deep red, or almost livid colour: after a day or two, a thin corrosive *sanies*, or with it a white putrid matter of a thicker consistence, flows from them, which is so acrid, as to excoriate the part it lies upon any considerable time. This is most observable in children, or in young and very tender subjects, whose lips likewise are frequently of the colour above-mentioned, and covered on the inside with vesicles containing a thin *ichor*, which excoriates the angles of their mouths, and the cheeks where it touches them.

It is probable, that part of the same acrid matter passes with the nourishment into the stomach; especially in children; and it is perhaps owing to this cause in part, that they suffer much more from the distemper than adults;

\* I have seen many cases, where these glands were so enlarged, as to force back through the nostrils most part of what was attempted to be swallowed.

this corrosive fluid, without doubt, producing the same effects on the stomach and bowels, as it does when applied to the much less sensible skin of the face; *i. e.* it excoriates the parts it touches; which, in fact, seems to be the case: for, if they get over this stage of the disorder, a purging sometimes succeeds, attended with the symptoms of ulcerations in the bowels; and after enduring great pain and misery, perhaps some weeks, they at length die emaciated. I have been informed, that some children have had the parts about the *anus* excoriated\*; the *sanies* retaining its virulency through the whole tract of the intestines.

The sick sometimes bleed at the nose towards the beginning of the disease; and the *menfes* very often appear in those of the female sex who are of age to have them, soon after they are seized, notwithstanding the regular period is at a considerable distance: if they are taken ill about the usual season, the discharge is commonly greater than it ought to be. Some young persons, who never had the least appearance of them, have had this evacuation during their illnesses.

In strong and full habits, these evacuations are seldom attended with much benefit, or with

\* Some adults, who have had the disease in a violent degree, have suffered very much from the same cause: emollient mucilaginous liquids taken plentifully, and also applied externally, by way of fomentation, to the part affected, frequently give speedy relief.

manifest ill effects, unless they are very copious; for in this case they occasion great faintness, and an increase of the other symptoms, in proportion to the excess. In tender weak subjects they are often prejudicial.

It has happened in this distemper, that hæmorrhages from the nose and mouth have suddenly carried off the patient. I have heard of the like accident from bleeding at the ear: but these fatal discharges most commonly happen after the patient has been ill several days; and it seems more probable, that they proceed from the separation of a slough from the branch of an artery, rather than from a fulness of the vessels; or an effort of nature to relieve herself by a salutary crisis\*.

Bleeding in this disease has in general been observed to be prejudicial: some indeed admit of it at the first attack, without any sensible inconvenience; but a repetition of it, even where

\* This, I find, was also Heredia's opinion, who considers a discharge of blood, either from the mouth or nose, as a sign of the utmost danger.—*Malignam significationem præbet fœgnis sanguis stillans e naribus; ex corrosione quippe vasorum, et putrilagine emanat, innuitque certissimam mortem, quia putredo interne cohiberi non potest:—ideo periculosissimus censetur sanguinis fluxus ex naribus aut ore. Quidam cum hoc signo nullum vidisse liberatum docent: nos vero unicum solum ægrotum summa diligentia a tanto periculo vindicavimus. Heredia, p. 100.* Of three whom I attended, and who had this symptom, two recovered: the third died of a bleeding at the nose, before any assistance could be procured.

the disease is mild and favourable, seldom fails to aggravate the symptoms; and in some cases it appears to have produced very fatal consequences. The heat, restlessness, delirium, and difficulty of breathing, which this evacuation commonly prevents or mitigates in other cases, in this are increased by it: nor does the swelling of the *tonsils*, *fauces*, &c. seem to receive the least benefit from it; on the contrary, though the fulness of these parts decreases, yet the sloughs thicken, and change to a livid or black colour, the external tumour grows large, and the spitting commonly diminishes\*.

Nor has purging been observed to be more beneficial: gentle cathartics have brought on very dangerous symptoms. Upon procuring a few stools with manna, especially when the disease has continued two or three days, the redness of the skin has disappeared, and the flux to the throat has been surprisngly increased: if it happens that this discharge by stool continues, the swelling of the neck commonly grows larger; the *fauces* become flaccid, dry, and livid; and the patient in a few hours after this expires: so that purgatives seem to have no better effects in diminishing the tumour, and

\* The heat, indeed, and quickness of the pulse, seem at first to be affected by this evacuation, but they commonly return after a fallacious respite with greater violence; the patient is seized with a difficulty of breathing, falls into cold sweats, a stupor, and dies suddenly.

abating the supposed inflammation, than bleeding.

Nitrous cooling medicines frequently produce the like effects; they increase that faintness which accompanies this disease, and either dispose the patient to copious sinking sweats, or to stools.

Upon the whole it appears, that all evacuations which tend to lessen the natural strength of the constitution, are in this disease injurious; and that those persons in common are in the greatest danger, if attacked with it, who have been previously indisposed, or have had their strength impaired by grief, or any other accident. Of this it may not perhaps be improper to relate an instance or two in this place, as it will also tend to explain the usual progress of the symptoms in the worst cases we meet with.

A young gentlewoman, about twenty-six years of age, of a pale lax habit, but of an active chearful disposition, had enjoyed a pretty good share of health in common, till a year or two before her last illness; about which time she unhappily made use of some external and empirical application to remove a redness attended with pimples, which now-and-then broke out in her face. She was soon relieved from this complaint by the medicine she used; but was quickly after seized with sickness, vomiting, loss of appetite, and either an obstinate costiveness, or a troublesome diarrhœa; the *menfes* were pale, and in small quantities;

quantities; and her health in general was greatly impaired.

She had scarce recovered from this weak state, when the death of a near relation brought her almost into the same circumstances, from which she was slowly recruiting, when she married. Her sickness, vomiting, and loss of appetite, soon returned; which she concealed as much as possible.

Under these disadvantages, she was seized with this distemper, a day or two after she had visited an acquaintance labouring under the same disorder: it came on with a coldness and trembling like that of an ague-fit, great faintness, and an acute pain in her head, with a vomiting more violent than she was usually affected with, and a purging. Towards evening she grew very hot and restless, complained of a soreness in her throat, and the discharges abated. Her face, neck, and hands were intensely red: she frequently sighed, and from her aspect and gestures there was reason to suspect a delirium approaching. She slept little that night; and next morning her pulse, which before was very quick and small, seemed to be somewhat more full, but not sensibly slower; and she complained of faintness and anxiety. The parts about the *fauces* were much relaxed, very red, in some places almost livid, with a kind of glossy dryness upon them. She continued in this manner, without any remarkable increase of symptoms, till night, when she loosened, and in a very short time exhausted

exhausted her strength to a great degree: the redness upon the skin disappeared, the extremities grew cold, her eyes became dim, her pulse scarce perceptible, she breathed with difficulty, and expired in the morning, on the third day of the disease.

Another young woman, who frequently visited, and sometimes assisted, a relation who had this disease, was attacked with it in the usual manner. She was about seventeen, of a pale and somewhat bloated lax habit, naturally inactive, averse to exercise, and was thought to have indulged some painful solicitude, to the prejudice of her health, and making way for an obstinate chlorosis.

Under these circumstances she was seized with the usual complaints, but in a violent manner. The purging continued till the day following; when it yielded for a time to the power of opiates; but constantly returned when their effects were over. The other symptoms, such as heat, restlessness, anxiety, and faintness, increased with the purging; the pulse was small, quick, and hard; a difficulty of breathing came on; the small remains of lustre in the eye perished; and she died early on the fourth day of the distemper.

No marks of any sloughs in the throat appeared in either of these cases; but the redness became daily more intense, and approached nearer to lividness, whilst the *fauces* could be inspected, which, from the great difficulty they



had in breathing, was impracticable, several hours before the patients expired.

Warm aromatic cordials, and anodyne astringents, were administered assiduously, with suitable nourishment, and vesicatories applied successively to the neck, back, and arms, but without effect.

If the purging therefore continues long after the first exacerbation of the disease, it may be looked upon as a dangerous symptom: for though it be sometimes restrained for the present by opiates or astringents, yet it commonly returns with more vehemence when their efficacy ceases, and in a short time exhausts the small degree of strength remaining.

In this case they generally spit very little; the *fauces* appear dry, glossy, and livid; the external tumour grows large; they void their excrements without perceiving it, and fall into profuse sweats; respiration becomes difficult and laborious; the pulse sinks; the extreme parts grow cold, and death in a few hours closes the scene: and in no disease that I have seen, is the eye so early deprived of its lustre as in this; for it is sometimes opaque or dim several hours before death; and, as *Ætius Cletus* hath observed, is a fatal presage of its approach\*.

A copious

\* *Heredia's* description of the fatal progress of this disease, and the necessary cautions he gives in respect to the prognostic, deserve particular notice.

*Fallacissimam esse hujus morbi naturam, consentitur omnes.*

A copious flux of pituitous matter to the glands, and other parts about the *fauces*, seemed to be the cause of sudden death, in a girl about twelve years old. She was seized in the common way, with shivering, head-ach, sickness, vomiting, and purging. The discharges abated in a few hours, and were succeeded by great heat, redness of the skin, and a sore-throat; the *uvula*, *tonsils*, and contiguous parts, were red, and so swelled in eight or ten hours, as to touch each other, and seemed to close the entrance into the *pharynx*. She breathed without much difficulty, swallowed with less pain than could be imagined, and spit up large quantities of phlegm. About six in the evening she was seized with a difficulty of breathing, as if strangled: those

nes.—Ulceribus oris, et partium quæ visui existebant conspicuæ, recte curatis, et sedata inflammatione æger periclitatur.—Ex eo quod paulatim serpit putredo per asperam arteriam ad cor, aut per gulam ad ventriculum, sine aliquo dolore, aut febris sensibili, cujus sit habenda cura: et cum medicis auxiliis, ablata fuerint ulcera, et inflammationes sedatæ in partibus visui patentibus, occulta putredo, paulatim mortificans partes internas, tabe, parvissimis et debilissimis pulsibus extinctione caloris, refrigeratione extremorum, faciei extenuatione, inappetentia perpetua, et molesta mutatione decubitûs, somno fallaci, et apparente, quia vigilandi impotentia, somnum verum æmulatur, misere ægrotantes interficit, ut visum jam sit subita et inopinata morte periisse aliquos,—e lecto surgentes, et intra domos ambulantes; ob quod etsi quæ vitiata apparebant in faucibus, aut partibus aliis, in melius mutata conspiciantur, non licet salutem polliceri, quia solet communicari paulatim putredo, et gangræna partibus internis. Heredia, p. 99.

about

about her raised her up, thinking she was in a fit; she recovered herself a little, but expired upon being again laid down in bed, in somewhat less than twenty-four hours from the first attack. A large quantity of viscid phlegm, with which, after she was dead, her mouth appeared to be filled, together with the tumefied *uvula*, *tonsils*, and *velum palati*, had perhaps jointly closed the *rima glottidis*, and put a stop to respiration.

By a fall in her infancy she was reduced to the necessity of using crutches. She was big-boned, had a good appetite, and, for want of that exercise which persons at her age commonly enjoy; seemed to be plethoric. These circumstances, perhaps, might contribute to this speedy and unhappy event.

Accidents of the like kind seem not to have been uncommon while this disease continued in Italy, according to a remark of Cortesius\*.

From the preceding account of the Sore-throat attended with Ulcers†, it will, I believe, appear, that this disease is widely different from a common Sore-throat, or simple inflammation

\* —Ad prædictarum partium (Uvulæ, Tonsillarum) inflammationem subsequēbatur interdum materia quædam pituitosa a capite tam repente et inopinato descendens, ut miseri ægrotantes subito suffocarentur. Cortes. Miscell. p. 697.

† The disease here treated of is, strictly, “ a Sore-throat;” since by foreness we aptly express the uneasy sensation accompanying an ulcer (i. e. a fore) and not that which attends an inflammation, which is indeed pain, but not properly foreness.

of any of the parts about the *fauces*; both as to the subject commonly affected by it, the manner of its attack, the progress of the symptoms, and its conclusion: for the Sore-throat with Ulcers generally attacks children; and of these, girls more frequently than boys, as hath been observed. If adults are seized with it, they are commonly such as have been very much conversant with the sick, or else are weak and infirm: and it seems to affect those adults in the severest manner, who have been previously indisposed, or whose strength has been reduced by unseasonable or immoderate evacuations.

On the contrary, the common *Angina*, or an inflammation of the *tonsils*, most frequently attacks the healthy, the vigorous, and robust; the weak, the delicate, and infirm, are less exposed to it, at least suffer less from it, than the former.

As both diseases are attended with a fever, and as most fevers come on with shivering, or chillness, this symptom may at least appear equivocal: but if sickness, or vomiting, or purging, or an acute pain of the head, towards the back parts or top especially, or if all these come on in the space of a very few hours, which they generally do where the disease is vehement, it may justly be esteemed to be of the putrefactive kind; but if with these symptoms an erysipelatous redness discovers itself in the *fauces*, with ulcerations or sloughs, the disease is evident.

In some cases, the symptoms have been so obscure,

scure, that it was difficult to determine to which disease they properly belonged: but in these circumstances they were commonly so favourable, that, supposing the disorder not to be of the ulcerated kind, no other inconvenience seemed likely to ensue from treating it as such, than a suppuration; which is often an event rather to be chosen than avoided.

The redness of the skin in the face, neck, breast, and hands, is another obvious and distinguishing characteristic, which in children, and young people especially; seldom fails to accompany this disorder.

In the common Sore-throat, a local inflammation is the disease; all the symptoms are derived from this source; and an acute throbbing pain, greatly increased upon swallowing even liquids, is the principal grievance. In the other, the whole habit suffers, as if by a *stimulus* of a peculiar nature; and although the throat is always more or less affected, yet it is sometimes the least part of the patient's complaint; and instances have occurred to me of considerable sloughs being formed, before any soreness or pain in the *fauces* hath been mentioned.

Again, this disease is accompanied with a greater tendency to a delirium, than either a common *Angina*, or almost any other distemper we are acquainted with. To have this symptom appear, in the disease we are treating of, on the first night, is not uncommon; and on the second, frequent. A girl about eight years of

age, whom I attended, was scarce known to be indisposed, till she alarmed the family, by appearing to be light-headed. She had made no complaint of her throat, nor was this part thought to be affected, till, upon examination, I found it so; being led to suspect it by the colour of her hands, and the delirium. She got well through the disease, though its progress, at first, appeared to be very swift.

A common Sore-throat, if the patient recovers, either goes off by resolution, or the parts affected suppurate; or, if glandular, become hard and schirrhous.

In that attended with ulcers, none of these circumstances happen; for it terminates in a superficial ulceration of some of the parts about the *fauces*, if the disease is very mild, with little appearance of any sloughs, and with large and deep ones, of a white cineritious, livid, or black colour, if it is more violent.

It will not, perhaps, be difficult, from such a comparative view, to distinguish this disease from a common Sore-throat, or an inflammatory affection of those parts, in most instances: but there is another no less certain criterion, though too often a fatal one, which is the constant increase of symptoms upon bleeding, purging, and the liberal use of cooling antiphlogistic medicines: a method, which, as it seldom fails to remove a genuine inflammation, if it is early enough and assiduously pursued, so it is too often injurious in the present case; an instance whereof I think

think evidently appeared in the following subject.

A youth about fourteen years old, of a brisk, lively disposition, who had enjoyed a good share of health, saving that, for a few years past, a cutaneous disease, a-kin to a leprosy, had sometimes appeared on his head and arms, was seized one morning with a general uneasiness, and a disposition to vomit; he was put to bed, and a severe shivering ensued; his sickness increased, he vomited up every thing, had several purging stools that day, and complained much of his head, with some soreness in his throat. He was ordered to be bled, and had an emetic given him: this operated but little; he grew hot and restless, a deep redness spread itself over his face, hands, and arms, with a plentiful eruption of small pimples, which induced those about him to apprehend it was a common scarlet fever.

The next day, which was the second of the disease, his throat continuing sore, and the feverish symptoms increasing, a purge of manna was given him, which operated gently; and at night his head and throat being more uneasy, his heat still continuing, with a tendency to delirium, a blister was applied.

On the third, the symptoms not abating, he lost about ten ounces of blood. He had taken a cooling nitrous powder every four hours; this was now changed for one more cordial. At night he grew delirious, his fever increased, and he had some loose stools, which were rather en-

couraged than restrained, as it was hoped they might relieve him. Blisters were applied to his head and arms.

On the fourth in the morning I was sent for: I found him delirious, with convulsive twitchings; his hands were in constant motion, gathering the bed-clothes; his pulse was quick and weak, and his tongue parched. With some difficulty I looked into the *fauces*; they seemed to be pale in some places, intensely red or livid in others, with a glossy brightness: his excrements came away involuntarily; his eyes were languid and dim: he breathed with difficulty, fell into profuse clammy sweats, and died in a few hours after.

In some of the first cases I met with, the quickness of the pulse, the degree of heat, the apparent inflammatory redness of the eyes and face, and pain in the head, sometimes urged me to order bleeding, especially if there were any marks of a plethora; but in these cases it did not appear to have any advantageous effects: so that, notwithstanding the vehemency of the symptoms above mentioned, it seems proper in general to omit this evacuation.

Cupping with scarification has been applied to the shoulders and back of the head, in order to remove an acute pain of this part, which is often complained of, but, as far as I have been able to observe, without much benefit.

It is necessary that the patient should keep in bed as much as may be, though the disease  
should



should seem to be slight: it has happened, for want of care in this respect, that a purging has come on, the redness of the skin disappeared, and a disorder which, with confinement alone, would probably have gone off in twice twenty-four hours, has been rendered tedious and difficult.

If we are called in at the first, while the sickness or vomiting continues, it will be of use to promote this discharge, by giving an infusion of green tea, camomile-flowers, *carduus*, or a few grains of *ipecacuanba*. In some instances, where the attack has been severe, and this method practised, the disorder has gone off with more ease than was at first apprehended,

If these symptoms do not abate with the operation of the emetic, small draughts of mint-tea, with a sixth part of red-port added to it, may be given frequently; together with some grateful and warm aromatic, cordial medicine, every four or six hours. The *Pulvis Contrayervæ simp.---comp. Confect. cardiac.-----Raleigh. Spec. arom. Vinum croceum; Aq. Mentb. spirit. Aq. Alex. spirit. cum Aceto\**; with others of the like nature, may be used for this purpose,

In this disease, it is at all times necessary to

\* Vegetable acids, such as the juice of lemons, oranges, wood-sorrel, verjuice, vinegar in small doses, and the like, as they are undoubtedly antiputrescents, may seem to be indicated; but their proneness to increase the discharge by stool, or profuse sweats, ought to render us very circumspect in using them.

attend very carefully to the diarrhœa. For the most part it ceases with the vomiting, in less than twelve hours from the first attack: if it continues longer than this period, it is necessary to check it, otherwise it occasions great faintness, sinks the strength, and in the end produces very dangerous consequences. The aromatic cordials above mentioned, if they are given plentifully, commonly take off this symptom, as well as the vomiting; but if they prove ineffectual, recourse must be had to astringents and anodynes, in proportion to the exigence of the case; such as the *Confectio Fracastorii*, or *Elect. e Scordio*, dissolved in small cinnamon-water, and given *post singulas sedes*.

It is common for the redness, so often mentioned, to appear upon the skin, as these discharges abate: it has happened that this colour has gone off sometimes, and the patient has been brought into imminent danger, upon giving a mild cathartic: which circumstances, as they point out a close connection between them, indicate the use of a warm regimen, notwithstanding the heat and other symptoms might seem to forbid it.

A girl about nine years old, of a slender make, but healthy and active, was seized with this disorder. The sickness and vomiting went off, and the redness of the skin appeared soon after: the apothecary who attended her, judging it an inflammatory case, as she complained of her throat, bled her, gave her a cooling purge the

next

next day, and afterwards some nitrous draughts. A plentiful efflorescence which covered the face, neck, and arms, suddenly disappeared; a diarrhoea came on; she grew restless, faint, and insensible. In this condition I first saw her on the third day of the disease; she frequently sighed, her pulse was quick, small, and hard, without any remarkable colour upon her skin; and the swelling on each side the neck large: it was not possible to examine the *fauces*, as she lay in a comatous motionless condition, her stools and urine coming away insensibly. A warm cordial mixture \* was frequently given her, upon which the diarrhoea soon abated; and the next day the efflorescence again appeared upon her face and arms. From this time she continued to recover, though slowly, and was for some time attended with a cough and hectic heat.

Another symptom, which requires our attention in the cure of this disease, is an excessive faintness: of this they generally complain soon after they are taken ill, and continue to do so, if sensible, till the distemper begins to abate: the urgency of this symptom seems to indicate the degree of danger: it is more or less violent, as the disease is mild or malignant; and an abate-

\* ℞. Aq. Alexit. simp. ℥vj. Alexit. spir. cum acet. ℥jss. Conf. cardiac. ℥ss. Pulv. Contray. simp. ℥ss. Syr. Croc. ℥ss. f. mixt. de qua capiat ægra coch. ij. tertia quaque hora.

ment of it may be looked upon as a pretty sure preface of recovery.

Warm aromatic and gently stimulating medicines, such as have been already mentioned, as the most effectual to suppress the vomiting, and check the looseness attending this disease, have likewise been found useful in removing this symptom: and though the degree of heat, and quickness of the pulse, would be enough to dissuade a person who has not seen the disease, from giving them in so liberal a manner as necessity requires; yet we are not to be governed so much by these symptoms, as by the faintness, depression of the pulse, and increase of putrescency in the *fauces*. One dram of the *Confectio Raleighana* has been given to a youth not quite 15 years of age, every four hours, which was soon followed by a sensible amendment, and the decrease of the patient's restlessness, faintness, and heat.

Some of the Italian physicians forbid the use of wine in the cure of this disease, and the warmth of their climate might perhaps make this caution necessary; but as it is a generous cordial, and at the same time antiseptic, it seems to be in no respect improper here; and, besides, in whey, I have allowed it to be given, freely, mixed with mint, baum, or sage-tea, barley-water, gruel, panada, sago, and the like; and alone, where the faintness has been excessive; the age, the former way of life, and the symptoms, affording the necessary rules as to quantity  
and

and kind. Chicken-water, or thin broth, may also be allowed, which is frequently very acceptable to the patient. And I don't remember to have observed so general and early an inclination after animal food, in any acute disease, as in this: for at a time when one would imagine, both from the condition of the *fauces*, and the degree of heat, that liquids would be the most acceptable, it is not uncommon to find children, who have this disease, extremely desirous of chicken, and cheerfully complying with directions, in hopes of being gratified in this respect.

Blisters are likewise of use to relieve the faintness. At first I was in doubt, lest the flies, by their acrimony, should increase the putrescent disposition, and consequently aggravate the disorder they were intended to remove: but no such effect having appeared from their use, I have ordered them to be applied; and I think with advantage, both to the usual parts, and to the neck on each side from below the ear almost to the clavicle, as occasion required\*.

The ulcers in the throat demand our early and constant attention, as a considerable loss of substance cannot here be suffered without immediate danger to life itself, or the most injurious consequences to the future action of the parts; if the patient survives.

\* It has been observed by several, that the discharge from blisters in this disease is in general both more copious at first, and continues longer than is usual in other cases.

Where the disease is of the mildest kind, a superficial ulceration only is observable; which may easily escape the notice of a person unacquainted with it. A thin, pale, white slough seems to accompany the next degree: a thick, opaque, or ash-coloured one is a further advance: and if the parts have a livid or black aspect, the case is still worse. These sloughs are not formed of any foreign matter spread upon the parts affected as a crust or coat, but are real mortifications of the substance; since, whenever they come off, or are separated from the parts they cover, they leave an ulcer of a greater or less depth, as the sloughs were superficial or penetrating.

When the tendency to putrefaction is stopped, these sloughs in most cases come off spontaneously; or their separation may be promoted by suitable remedies and applications: but it seems by no means adviseable to attempt it by force, or to scrape them off with the fingers or instruments, as Severinus proposes; since the experiment has been tried, but with such unhappy consequences \*

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\* Si quis tamen vel digitis, vel aliquo instrumento levi ipsam (materiam albam) auferre tentasset, quamvis operatio hæc fieret absque dolore, ea tamen ablata brevissimo tempore peribant ægrotantes; quod præ cæteris in Petro Soprano genero meo observatum est, cui cum hujusmodi mortificatio apparuisset in suprema superficie dictarum glandularum faucium, et palati, ita ut videretur esse maximo respirationi et deglutitioni impedimento, chirurgus existimans posse facillimo negotio a subjectis partibus eam separari solis digitis, levissime quidem eam abstulit; quæ ablata, tantum abest ut juverit deglutitionem aut respirationem, ut utraque potius

as are sufficient to discourage one from persisting in this method\*.

In a case where I was concerned, previous to my being called in, a surgeon had endeavoured to separate the sloughs by the assistance of his probe: he succeeded in his attempt without much difficulty; but was surpris'd to see the same parts covered the next day with thick, dark, ash-coloured sloughs, penetrating deep into the substance.

It is true, the sloughs have been sometimes scarified, from an apprehension that matter was lodged underneath them, without any manifest inconvenience; but as there are instances of fatal mortifications having ensued, it seems most prudent to decline the practice.

From under these sloughs, and from every part of the ulcers which they cover, a thin corrosive *ichor* is discharged, so acrid as to excoriate the external parts upon which it is suffered to remain. This is sometimes observable in adults, when the parts above the *fauces* are affected;

potius actio læsa magis fuerit, unde brevissimo tempore miser, meo cum maximo dolore, mortem appetiit; id quod etiam in aliis quamplurimis pueris sæpius observavi, et præsertim in ejusdem Petri filiolo nepoti ex filia, quinque annorum, mihi carissima, qui post paucos dies eodem modo, quo pater, vitam cum morte mutavit. Cortes. Miscel. Med. p. 697.

\* Quod si enim adhærentem adhuc crustam avellere aggrediamur, ulcerationes magis in profundum procedunt, et inflammationes consequuntur, augentur dolores, et in ulcera serpentina proficiunt. Heredia, p. 109.

the *ichor* in these cases flows through the nostrils, and frequently raises pimples and small blisters on the skin of the upper lip; but it is most obvious in children, who often have this part, the corners of the mouth, and the cheek on which they commonly lie, blistered or excoriated.

It is probable, as hath been already hinted (p. 374), that part of the same virulent matter, passing down the *œsophagus* into the stomach and intestines, acts upon them as it does upon the skin, when applied to it externally; it frets and corrodes the parts it touches, and produces that sickness, vomiting, purging, and faintness, which sometimes accompany this disease in different parts of its progress.

In children, and very young subjects, the symptoms arising from this cause are yet more dangerous: the natural softness and laxity of the parts liable to be affected, disposes them to suffer by it much more than adults: at the same time they are commonly alike incapable of promoting the discharge of this matter themselves, and of admitting assistance from others, being generally, if the distemper is not very mild, either comatous and stupid, or delirious and untractable. If gargles are injected, they either prevent them from reaching the seat of the disorder, by their tongues, or they swallow them, and the putrid taint of the ulcers, together; the mischief spreads beyond the power of art to restrain it; violent purgings ensue, or fatal hæmorrhages



morrhages from the penetrating gangrene. And to this, perhaps, it may in part be owing, that children suffer so much more from this kind of Sore-throat, than adults \*.

That this corrosive matter produces these effects, is farther confirmed, by observing, that those whose throats are severely affected, if they have a plentiful discharge from the *fauces*, are seldom attended with sickness, vomiting, or excessive faintness; tho' after longer sleeps than ordinary, or a neglect of encouraging this evacuation, they have complained of sickness, and have had retchings come on: and in such cases, where there has been little or no discharge of this kind, the symptoms are commonly the most dangerous.

From hence it is obvious, that great advantages may be expected from the constant use of gently stimulating aromatic gargles; as they promote the discharge of the pituitous matter flowing to the *fauces*, and doubtless, with it, of some part of the corrosive fluid above mentioned: to which if we add antiseptics and detergents, in order to check the progress of the mortification, and cleanse the sordid ulcers it produces, every indication is provided for.

\* Heredia takes notice of the same thing, and gives it as a principal reason why so many infants and children suffered by this disease.

Infantum et puerorum multitudo maxima perit, quia nec exspuere, nec excreare lentas et crustaceas materias possunt, et minus auxiliis obediunt. p. 100.

Where

Where the disease is mild, the symptoms favourable, the sloughs superficial, or scarce perceptible, it may be sufficient to order a gargle of sage-tea, with a few rose-leaves added in the infusion; three or four spoonfuls of vinegar may be mixed with half a pint of the tea, and as much honey put to it as will leave it agreeably acid.

But where the symptoms are urgent, the tendency to putrefaction great, the sloughs large and thick, and the breath offensive, recourse must be had to more efficacious remedies: a composition like the following, varied only as the patient's age and the circumstances of the disease required, has in general been attended with very good effects. The proportion here given may be used for adults, and the more active parts lessened for younger subjects.

℞ *Decoct. Pectoral.* ℥xij. *cui inter coquendum add. Rad. Contrayerv. contus.* ℥ss. *Liquori colato admisce Acet. Vin. Alb.* ℥ij. *Tinct. Myr.* ℥j. *Mel. opt.* ℥vj. *f. Gargarisma.*

As the parts about the gullet are frequently so much affected, as to render it painful or impracticable for the sick themselves to make use of the gargle so freely as they ought, it is commonly ordered, that a few spoonfuls of this liquor, made somewhat warm, should be very often injected into the *fauces* with a small syringe; and especially before the patient swallows any thing,

thing, in order to wash off as much as possible the putrid *sordes* adhering to the ulcers, and prevent it from passing into the stomach and bowels \*. In young subjects this method is the more necessary, as they don't always know how to manage a gargle to any purpose, did the foreness of the parts permit them to do it †.

As so much depends upon the frequent use of gargles, or rather of injections, a strict attention to this affair can scarcely be too strongly enjoined on those who have the care of the sick committed to them; since an assiduous repetition of these lotions not only promotes a discharge from the glands of the throat, which is probably of great use ‡, but retards the progress of the ulcers, by washing off the putrefactive corroding *virus*, and prevents a large train of very dangerous symptoms (see p. 395.); and has therefore been strenuously insisted on by several writers, by Mercatus especially §.

\* The same caution was given by Heredia, and almost in the same terms.—*Cujusque rei deglutitionem præcedat excrementorum oris excretio, deterfio, ne lotione venenosa excrementa cum rebus deglutiendis ferantur ad viscera.* p. 109.

† — cum pueri nequeant gargarismatis uti, injiciantur cum syringa. Idem, *ibid.*

‡ Heredia, after having observed, that no evacuations by stools or sweat were of use in this disease, admits that some advantages may be expected from this discharge. *Est autem aliqua spes in frequenti exspuitione, quando crassa et glutinosa excreatur.* p. 100.

§ Cavendum est diligenter, ne sic affecti deglutiant propriam salivam, quinimo ora puerorum diligentissime sunt abluenda. Mercat. p. 137.

If the sloughs are large, and cast off slowly, they may be touched with *Mel. Egyptiacum*, by means of an armed probe; or if the condition of the *fauces* is such, that this cannot conveniently be done, a spoonful of the following mixture may be injected, and retained in the throat as long as the patient can endure it; the parts may then be washed two or three times with the gargle alone.

℞ *Gargarism. præscript.* ℥ij. *Mel. Ægypt.* ℥j. *m.*

By the constant and regular use of these applications, if the patient is kept warm, and the method of treating him in other respects is observed, agreeable to what has been mentioned above, it seldom happens but that the febrile symptoms disappear, the sloughs come off, and the ulcers are disposed to heal in a few days; unless it be where mismanagement at first, malignity of the infection, or an unfavourable constitution, have one or all contributed to increase the disease, and to render its consequences more lasting and mischievous.

What effects improper treatment produces in this case, has already been observed. With regard to the matter of contagion, or the nature of that cause which so suddenly brings on such a train of symptoms as hath been described, little can be said with any degree of certainty; thus much, however, seems to be true in fact, that in some cases this disease appears to be of so mild a nature, and so benign, as to require  
but

but little assistance from art: persons even recover from it under the disadvantages of unskilful and injurious management; whilst, in others, the progress of the symptoms is so rapid, and the tendency to corruption so strong, that nothing seems able to oppose it. Just as it happens in the small-pox; the benign and distinct sort bears ill treatment without injury; in the malignant flux kind, the utmost art and experience are too often insufficient to conduct the distemper to a happy issue. Whether this diversity in the Sore-throat we are speaking of, is owing to a difference of constitutions, or of seasons; to the different quality or quantity of the contagion, or the manner of receiving it; or whether there are in reality distinct species of it; may perhaps hereafter be more certainly determined.

With respect to constitution, it may be further observed, that, in soft, lax, leucophlegmatic habits, and languid, inactive dispositions, every thing else being equal, the disease seems to proceed more slowly, to go off more irregularly, and to leave behind it more lasting effects. In some persons of the temperament described, though the fever has grown less, and all the symptoms abated in four or five days, yet the sloughs in the throat have continued almost a week after; whilst in the opposite constitution, though the disease has been much more acute, yet the symptoms have no sooner abated, than

the sloughs have cast off, and the ulcers healed of their own accord.

A copious hæmorrhage from the nose, mouth, or ears, the last especially, coming on after the disease has continued three or four days, or longer, is a dangerous *phenomenon*: for, at this time of the distemper, it most probably proceeds from the branch of an artery destroyed by the mortification, and laid open by the separation of the slough, as hath been already observed. If the vessel is therefore large, the bleeding may prove fatal to the patient in a very short time; or if he escapes for the present, the loss of a considerable quantity of blood at this time of the disease will occasion various ill consequences.

It is therefore absolutely necessary to endeavour to stop this discharge with all the expedition possible. If the patient is costive, it will be of use to procure relief in this respect, by clysters or suppositories, as soon as can be done: to apply vinegar, by means of tents, or otherwise, as near to the orifice of the vessel as we can: to convey the steam of it into the *fauces* and nostrils plentifully, and to keep the patient in a sitting posture, or his head raised as high as may be, and his upper parts moderately cool: if these methods do not immediately take effect, recourse must be had to more efficacious ones, amongst which we may rank the *bark* and *opium*.

It is not uncommon for hectic heats, night-sweats,

sweats, want of appetite, and dejection of spirits, to attend those a considerable time, who have had the disease in a severe manner. Fresh air, asses milk, and other usual means of recovering the wasted strength, in a short time restore to such invalids their pristine vigour.

Having thus related the most material circumstances that have occurred to me in respect to the symptoms, progress, and event of this distemper, the *juvantia*, *ledentia*, and the accidents chiefly to be regarded in its cure, in such a manner as I hope will enable those who have not seen or known it, to distinguish it from a *common Sore-throat*, and to treat it with some degree of propriety and success when it occurs, I shall conclude with observing,

1. That the *Sore-throat attended with Ulcers*, seems to be accompanied with a strong disposition to putrefaction, which affects the habit in general, but the *fauces*, and the parts contiguous, in particular. And it seems not unreasonable to suppose,
2. That the cause of this tendency is a putrid *virus*, or *miasma sui generis*, introduced into the habit by contagion; principally by means of the breath of the person affected.
3. That this *virus*, or contagious matter, produces effects more or less pernicious, according to the quantity and nature of the infection, and as the subject is disposed to receive or suffer by it.

4. That putrefactive and malignant diseases, in common, admit of the most sensible and secure relief, from discharges of the peccant matter, either upon the skin in general, or on particular parts of the body.
5. That the redness, and cutaneous efflorescence, in the present case, may be considered as an eruption of the like nature, and therefore to be promoted by such methods as have proved successful in similar diseases.
6. That a cordial, alexipharmac, warm regimen, has been found by experience to be of the most use in such cases; and that bleeding, purging, antiphlogistics, liberally employed, either retard or wholly prevent these discharges.

Therefore, as to expel the morbid matter (3) seems to be the design of Nature, to promote this design by the measures that are approved by experience in analogous disorders; is the duty of the Physician.





ARBUTUS *Andrachne*.

In Lodge sculp.

THE UNIVERSITY OF CHICAGO

PHYSICS DEPARTMENT

PHYSICS 309

LECTURE NOTES

BY

PROFESSOR

ROBERT A. FAY

CHICAGO, ILLINOIS

1963

UNIVERSITY OF CHICAGO PRESS

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A  
D E S C R I P T I O N  
O F T H E  
A N D R A C H N E\*,  
WITH ITS BOTANICAL CHARACTERS:

By G. D. EHRET, F. R. S. †

Read before the ROYAL SOCIETY, February 26, 1767.

---

**F**ROM a short and crooked stem go off irregularly several branches bending in various directions; but the younger shoots mostly pointing upwards. The height of the shrub is now about four feet.

The stem and branches are of different colours at different seasons. In the spring, they appear of a greenish cinnamon colour: this is gradually heightened to almost a red during winter; towards the end of which, the epidermis peels off,

\* I have introduced this description of the *Andrachne*, though written by Ehret, as I have reason to think it was done under the influence of Dr. Fothergill. This beautiful exotic is now in a flourishing state at Upton, in the open ground: it is about twelve feet high. *Editor.*

† Philosophical Transactions, vol. lvii. anno 1767, p. 114.

and the new bark exhibits the like appearance as it had the spring before.

On the extremities of these branches, the shoots of the preceding year, which are of a deep red colour, are many leaves of different sizes, placed irregularly; the largest leaves were in length, when the figure was drawn, about four inches, and two inches and an half in breadth, of an oval figure: they are mostly entire, though the edges of some are lightly serrated: their surface is smooth and lively, but not glossy or shining. They are supported on the branches by footstalks about an inch long, of a red colour, and smooth.

The young leaves, at their first appearance, are of a faintish green, with a cast of yellow, yet beautifully shaded with red: their footstalks and middle rib are then hoary, but they lose this appearance as they grow older.

This very rare shrub produced its flowers, for the first time in England, in the garden of Dr. John Fothergill, at Upton, near Stratford, in Essex, May 1766. The principal spikes of flowers in this species of *arbutus* are erect, producing many side ones in a horizontal direction, their extremities inclining downwards. Each of these simple ramifications contain many white globular flowers, hanging on long hoary glutinous pedunculi, which are situated alternately. These spikes of flowers, forming a kind of loose tuft, with the bright bunches of leaves, have an elegant appearance.

CHARACTERS OF THE FLOWER.

T A B. VI.

Fig. *a.* represents a side view of the flowers; they are of a globular shape, and open into five obtuse reflex laciniaë, in the manner of the common arbutus.

Fig. *b.* a back view of the flower, upon which appears the calyx spread open, and closely adhering to the flower; it consists of five oval pointed leaves or divisions: around this calyx appear on the corolla ten visible nectaria.

When these flowers drop off, the calyx closes up, and embraces the tender germ. See Fig. *c.*

Fig. *d.* represents a flower separated from the calyx; it is inserted at the base of the germen. The ten nectaria, which are somewhat swollen, or raised from the corolla, and have transparent appearances, are also discoverable, whilst the magnified figure *e* lays the parts more distinctly in view. This is a remarkable character in this flower.

Fig. *f.* exhibits the flower laid open: it is smooth without, and hoary within; it contains ten stamina, which are inserted at the base of the flower; their filaments and apices embrace half the style.

Fig. *g.* two stamina magnified, the base whereof is a tender fleshy substance, hoary, and of a club-like shape; this diminishes gradually into a filament, upon which is situated a singular anthera: this anthera bursts at two apertures

(as the figure represents), and disperses its farinaceous dust towards the style: from the top of this apex, comes forth, at the opposite side, two crooked forked horns, bending downwards in length of the anther.

Fig. *b*. the germen or rudiment magnified. This is hoary; its base consists of a red fleshy substance, with ten obtuse angles. The style supports a small globular stigma, and does not exceed the length of the flower.

Fig. *i*. represents a horizontal view of the germen, as observed through a lens: it has five regular loculaments or cells, though seemingly but one seed; but by a closer inspection, there appeared several embryo seeds in each cell.

Fig. *k*. a dried fruit or berry of the *Andrachne* in its natural size, with an horizontal section. This fruit, which is tuberculous, I drew from a specimen consisting of the whole branch, leaves, flower-spikes, with many ripe berries, which was brought from Aleppo, by Dr. Alexander Russell; all which I examined and described at that time for my own satisfaction, and find them to agree exactly with the recent shrub above described. It likewise seems worthy of observation, that the plants raised by the gardeners by grafting or inarching the *Andrachne* upon the common arbutus, which is the method chiefly used in propagating this elegant shrub, differ considerably from the plants raised from seed, particularly in this, that the young branches, and the footstalks of the leaves, are very hairy,  
and

and the leaves themselves are all, without exception, deeply ferrated like the arbutus. Dr. Ruffell also informs me, that the outer bark of the old stem and branches abroad, are for some months of the year of as beautiful a crimson, as the young shoots are here described to be, and doubts not but it will be so in this country, as the shrub grows older \*.

\* It may not be improper to mention, that the flower spike above described, with the glandular prominences, which were the rudiments of future flowers, made their appearance soon after Midsummer 1765 : they advanced very slowly during the remains of summer ; stood the winter under a slight cover, and made no great progress, till within a month of their flowering.

That plant, which produced these flowers, was one of several, which J. Gordon, of Mile End, was fortunate enough to raise from seed, sent by Dr. Ruffell from Aleppo, in 1754 ; and that this should be the only plant which has hitherto produced flowers, is probably owing principally to its having been divers times transplanted.

J. FOTHERGILL.

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the young ...  
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# MAGNETICAL MACHINE .

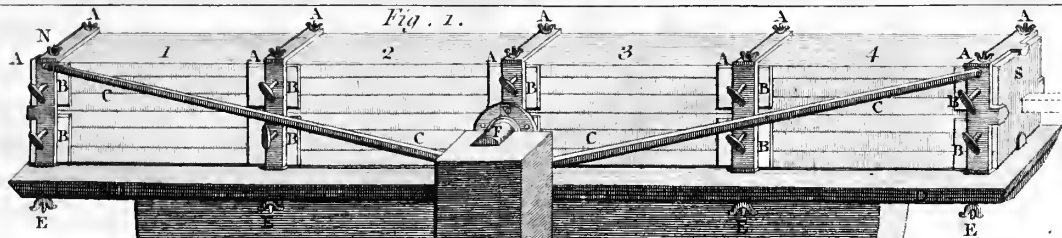


Fig. 1.

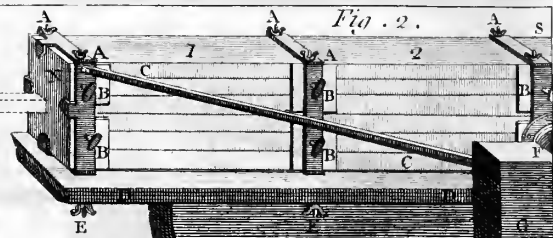


Fig. 2.

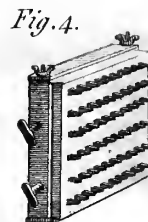


Fig. 4.



Fig. 6.



Fig. 5.

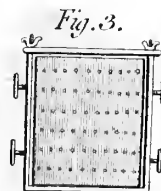
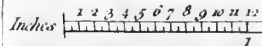


Fig. 3.



Scale of 6 Feet.

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A N  
A C C O U N T  
O F T H E  
M A G N E T I C A L M A C H I N E

Contrived by the late Dr. *Gowin Knight*, F. R. S.  
and presented to The Royal Society, by *John*  
*Fothergill*, M. D. F. R. S. \*

Read before the ROYAL SOCIETY, June 27, 1776.

---

To the President and Fellows of the Royal  
Society.

Gentlemen,

**B**Y being left executor to your late worthy member, *Gowin Knight*, M. B. a very extraordinary Magnetic Machine of his contrivance, and which had cost him much labour and expence, came into my possession. This, I thought, might not be unworthy of a place in your repository; and I therefore desire your acceptance of it, as a monument of Dr. *Knight's* very singular abilities, and of my regard to the purposes of your institution.

I must, however, inform you, that this Ma-

\* Philosophical Transactions, vol. lxvi. anno 1776, p. 591.

chine, which, by the annexed figure, and its explanation, may be observed to consist of two parts, is by no means so strongly magnetical as it was at the Doctor's decease. Not long after this event, it was necessary to remove this apparatus from his apartments in the British Museum. One of these parts was fixed up in your Museum, the other was left at the lodgings of one of your very useful, ingenious members, J. H. de Magellan, for the purpose of some experiments, and also for impregnating strongly the needles of sea-compasses. Here it was accidentally destroyed by fire, and the parts it consisted of rendered almost wholly useless. A new one has, however, been made, and impregnated with the magnetical power, by the ingenious gentleman above-mentioned, according to the method of Dr. Knight. It has acquired a considerable degree of magnetic force, by being placed in the polar line with the other part of this machine that was unhurt, and where in time it will, perhaps, acquire a considerable degree of magnetic energy.

I wish it had been in my power to have given a minute and pertinent detail of my deceased friend's discoveries in this branch of knowledge. He acquainted me, it is true, at different times in conversation, of the progress he had made in these discoveries; but, as I then thought he intended to leave behind him an exact account of his experiments and researches, and their result, I only listened to his relations as mat-  
ters



netic influx the longest, and with the greatest force, were material objects; and, I imagine, a view to have such a degree of magnetic power at his command, as to force the magnetic virtue through the most consolidated bars, was his first inducement to try, whether he could not collect such a magazine of magnetism, as would be sufficient for every purpose of this kind, and at the same time exhibit some new phenomena in physics yet undiscovered. With this view he planned and executed the machine, described at the end of this relation.

His first attempt, however, was much smaller; a few bars were laid in the due course of the magnetic flux, and impregnated by constant attrition. To these, other bars were added successively, after they had been impregnated, both by the force he could give them by attrition, and what he could derive from the preceding stock collected in the bars. To these he added still fresh bars, till he had formed the whole mass as it is now presented to you, and resting on wheels and pivots, in such manner as to be easily manageable for the purpose of impregnating the needles he was employed to see prepared, for the service of government, and others, who had generosity enough to think, that the compass, on which depended the lives of the ship's crew, could not be made too perfect, and that it deserved a reasonable compensation. It is to the Doctor's ingenuity and indefatigable attention

attention to this useful instrument, that it has acquired amongst us a degree of perfection unknown to our predecessors.

When the machine was completed, he still was adding continually to its power. He impregnated every single bar of which it is composed, by repeated attritions, and applied it to the remaining bars in their magnetic position. After this operation, he always found its efficacy, for a season, considerably diminished; for the effluvia of each bar, though increased in virtue, seemed not immediately to have acquired a communication with each other. However, it grew always more powerful after each of these operations; and it is more than probable, if a person could be found, who, with equal patience and skill, would, at proper distances, repeat the same process, that the present machine would acquire a degree of force superior to what the original ever possessed; for much depends upon time, and a due position. If to these was added a fresh impregnation of each single bar, by the means hitherto made use of, you would probably possess a larger fund of magnetic power, than exists in any artificial magnet now in being.

But if this cannot be obtained, if an able person cannot be prevailed upon to renew its vigour in this manner, it might possibly afford the curious some satisfaction to know, whether, in its present state, it loses any force, or acquires fresh virtue; to know, with some degree of precision,

precision, how much weight it will now suspend; and to observe annually its variation. I need not suggest, that a trial of this nature demands no small attention. Even the motion of a carriage in the street, though at such a distance as the Society's apartments, will make a considerable variation.

I do not know, that the Doctor left behind him any description of a composition he had made to form artificial loadstones. I have seen in his possession, and many other of his friends have likewise seen, such a composition; which retained the magnetic virtue in a manner much more fixed, than either any real loadstone, or any magnetic bar, however well tempered. In the natural ones he could change the poles in an instant, so likewise in the hardest bars; but in the composition the poles were immoveable. He had several small pieces of this composition, which had strong magnetic powers. The largest was about half an inch in breadth, very little longer than broad, and near a quarter of an inch thick. It was not armed, but the ends were powerfully magnetic; nor could the poles be altered, though it was placed between two of his largest bars, and they were very strongly impregnated. The mass was not very heavy, and had much the appearance of a piece of black lead, though not quite so shining. I believe he never divulged the composition; but, I think, he once told me, the basis of it was filings of iron, reduced by long-continued attrition with water to a perfectly



fectly impalpable state, and then incorporated with some pliant matter, to give it due consistence\*. Perhaps some of his acquaintance may have

\* The following account of Dr. Knight's method of making artificial Loadstones, was communicated by Benjamin Wilson, F. R. S. in a letter to Sir Joseph Banks, Baronet, P. R. S. Read before the Royal Society, December 17, 1778. Editor.

Sir,

The method of making artificial Loadstones, as it was discovered and practised by the late Dr. Gowin Knight, being unknown to the Public, and I myself having been frequently present when the Doctor was employed in the most material steps of that curious process, I thought a communication thereof would be agreeable to you and the philosophic world.

The method was this:—Having provided himself with a large quantity of clean filings of iron, he put them into a large tub that was more than one-third filled with clean water: he then, with great labour, worked the tub to and fro for many hours together, that the friction between the grains of iron by this treatment might break off such smaller parts as would remain suspended in the water for a time. The obtaining of those very small particles in sufficient quantity, seemed to him to be one of the principal *desiderata* in the experiment.

The water being by this treatment rendered very muddy, he poured the same into a clean earthen vessel, leaving the filings behind; and when the water had stood long enough to become clear, he poured it out carefully, without disturbing such of the iron sediment as still remained, which now appeared reduced almost to impalpable powder. This powder was afterwards removed into another vessel, in order to dry it; but as he had not obtained a proper quantity thereof by this one step, he was obliged to repeat the process many times.

Having at last procured enough of this very fine powder,

have been more fully informed of this circumstance; and it may be rendering great aid to future enquirers, to know every thing that can be collected relative to so curious a subject.

Lest the machine itself should be destroyed by the same accident as that which destroyed a part of it, I thought an exact representation of

the next thing to be done was to make a paste of it, and that with some vehicle which would contain a considerable quantity of the phlogistic principle; for this purpose he had recourse to linseed-oil in preference to all other fluids.

With these two ingredients only he made a stiff paste, and took particular care to knead it well before he moulded it into convenient shapes. Sometimes, whilst the paste continued in its soft state, he would put the impression of a seal upon the several pieces; one of which is in the British Museum.

This paste was then put upon wood, and sometimes on tiles, in order to bake or dry it before a moderate fire, at a foot distance, or thereabouts.

The Doctor found, that a moderate fire was most proper, because a greater degree of heat made the composition frequently crack in many places.

The time required for the baking or drying of this paste was generally five or six hours, before it attained a sufficient degree of hardness. When that was done, and the several baked pieces were become cold, he gave them their magnetic virtue in any direction he pleased, by placing them between the extreme ends of his large magazine of artificial magnets for a few seconds or more, as he saw occasion.

By this method the virtue they acquired was such, that when any one of those pieces was held between two of his best ten-guinea bars, with its poles purposely inverted, it immediately of itself turned about to recover its natural direction, which the force of those very powerful bars was not sufficient to counteract.

I am, &c.

it,

it, and its several parts, might be the best means of preserving it to future times, if inserted in the Transactions of the Royal Society.

#### EXPLANATION of the PLATE,

Plate III. shews the magazines according to the Doctor's last disposition of them. The two being perfectly alike, therefore fig. 2. contains only the half of one of them. Each magazine consists of 240 bars, disposed in four lengths, marked 1. 2. 3. 4.; every length containing sixty bars, placed in six courses or layers, in contact one on another; and ten in each course, placed side by side, in contact also. The bars being very nearly of a size, the ends of those in one length are in contact with the corresponding ends of those in the adjacent lengths. The magnetical North-ends of these bars, in each magazine, are all directed one way towards *n*; and the South-ends the contrary way toward *s*; thick plates of iron cover these ends *n* and *s*; the junction of the ends of the bars fall under the brass braces *AA*.

As it has been found difficult, after the final hardening of these bars, to preserve among them a perfect equality in size; therefore, the contact of their sides are perfected by thin iron plates *BB*, slipped in between the braces *AA* and the junction of the ends of the bars: and these

plates BB, being pressed by the screws passing through the sides of the braces AA, keep the ends of the bars in as close contact as their figures will permit; and, that the bars may be kept end to end in contact, the iron plate at the North-end in fig. 1. and at the South-end in fig. 2. is perforated with sixty holes, one against the end of each bar, as shewn at fig. 3. with a screw fitted to each hole, as shewn at fig. 4. : every screw having a square head as at fig. 5. may; by help of the key, fig. 6. be turned, and, by pressing against the end of the bar in the fourth length, force it against its abutting bar in the third length, and so on till the bars, end to end, are brought into contact and kept so. The braces are in two pieces; the sides and bottom in one; and the other piece forms the top AA, which is held close to the bars by the screws passing through it into the upright sides of the braces; and, to keep the braces at N and S steadily in their places, the two long braces CC are affixed.

As each of these magazines weighed about 500 lbs. it became necessary to have them so placed as to be conveniently used. The Doctor, therefore, by screws fixed the braces, containing the bars, to a strong mahogany plank DD, about 1 inch and  $\frac{3}{4}$  thick; the screws passing through the plank entered the bottom parts of the braces AA. Against the middle of the whole length, two strong brass plates are well fixed to the sides of the plank; to these brass plates are fixed two

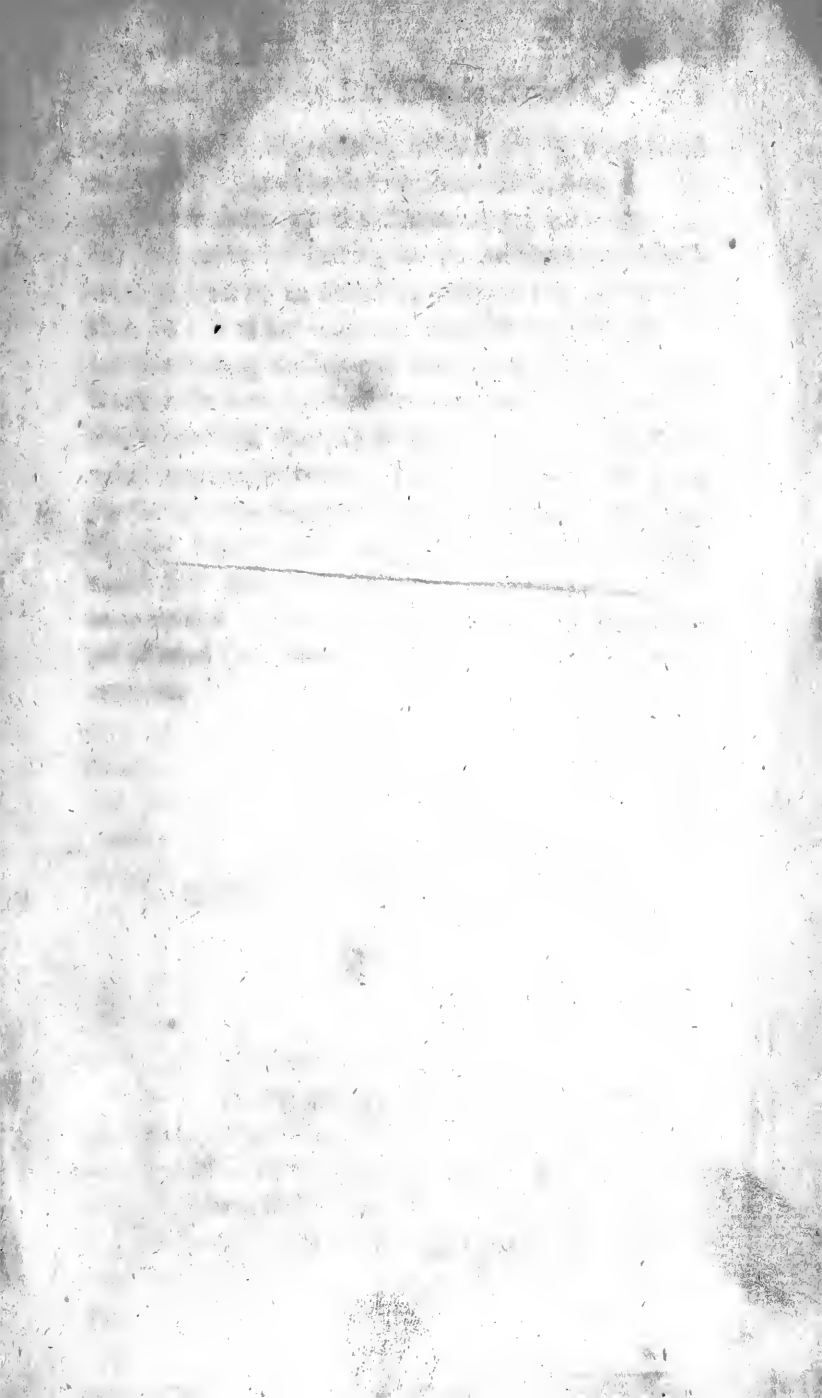
cylindrical gudgeons F, which projecting from the sides, like the trunnions of a cannon, lie in the sockets of the standard G, whereby the magazine easily turns, as on an axis; and is so well poised as to stand in any inclination of the line NS; and in this the equilibrium is assisted by the strong mahogany semi-circular pieces LL, fixed in a vertical position to the middle of the under part of the plank DD, on which the magnetic apparatus rests. The standards G are fixed to the square frame HH, and the whole supported on the four trucks II, whereby the two magazines are easily brought end to end, or set at a convenient distance, so as to admit a bar K, to be placed between the ends, to be made magnetic.

END OF THE FIRST VOLUME.

The first part of the book is devoted to a general history of the United States from its discovery by Columbus in 1492 to the present time. It covers the early years of settlement, the struggle for independence, the formation of the Constitution, and the growth of the nation to its present boundaries. The second part of the book is devoted to a detailed history of the United States from 1789 to the present time. It covers the early years of the Republic, the struggle for the abolition of slavery, the Civil War, and the Reconstruction period. The third part of the book is devoted to a detailed history of the United States from 1865 to the present time. It covers the Reconstruction period, the Gilded Age, the Progressive Era, and the modern history of the United States.

THE HISTORY OF THE UNITED STATES

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